



full color. It depicts a lovely summer day with puffy clouds hovering over a homestead where a woman and two young daughters have cut flowers from the prairie that literally surrounds the entire scene. The woman and a daughter stand holding bouquets in their hands, while the other daughter down near the ground gathers more flowers from the prairie. Might that splash of deep blue at the feet of the woman be prairie gentian, *Gentiana puberulenta*? For me it is!

While researching for this article, I came across an internet blog where a fellow was describing what he sees in this painting. He mentions the buildings being nothing more than shacks, but the woman standing tall and proud reminds him that life is a struggle even in such a paradise. That homesteading was a

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The Lost Garden

Lee A. Casebere, DNR, Division of Nature Preserves

Girdling the old oak to squeeze one last crop out of the barnyard has the same finality as burning the furniture to keep warm.

—Aldo Leopold, "Deadening,"
from *A Sand County Almanac* (1949)

I don't recall when or where I first saw it, but I have always admired a painting by Harvey Dunn (1884-1952) called "The Prairie Is My Garden." It seems like I saw it in an article in *Audubon* magazine about prairies or landscape artwork. I also recall seeing prints of it for sale years ago at Wall Drug in South Dakota, which makes sense since Dunn is considered an artist laureate of that state. He depicted scenes of pioneer life on the prairies from his first-hand knowledge of having grown up on a

homestead farm in eastern South Dakota in the late 1800s. This particular piece is so greatly admired by South Dakota residents that it is thought of as the unofficial state painting. Interestingly, Harvey Dunn was a contemporary of Laura Ingalls Wilder of *Little House on the Prairie* fame. Their families lived in the same area of the state and knew each other—two great artisans of pioneer prairie life, writer and painter, grew up within miles of each other!

Somehow, I had a feeling that I'd end up with a replica of that painting some day. A modest-sized print of it is now in my possession, a gift from my wife for Christmas, and it has joined a host of other art prints and photos on my already crowded walls. Do a Google search to see the painting in

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Indiana Native Plant & Wildflower Society

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INPAWS JOURNAL is published quarterly for members of the Indiana Native Plant and Wildflower Society. Material may be reprinted with the permission of the editor.

All are invited to submit articles, news items, and event postings of interest to our membership. Acceptance for publication is at the discretion of the editor. INPAWS welcomes opposing viewpoints.

Please submit text and photos via e-mail to journal@inpaws.org or via land mail to INPAWS JOURNAL, 5304 Carrollton Avenue, Indianapolis IN 46220.

Submission deadlines for specific issues are as follows:

Spring

February 23 for April 1 mailing

Summer

May 23 for July 1 mailing

Autumn

August 23 for October 1 mailing

Winter

November 23 for January 1 mailing

INPAWS Mission

To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the value, beauty, diversity, and environmental importance of indigenous vegetation.

Membership

INPAWS is a not-for-profit 501(c)(3) organization open to the public. For membership information, visit www.inpaws.org.

News and Views

Information to be shared with INPAWS members may be directed to webmaster@inpaws.org.

Officers

President	Art Hopkins	812-372-2862	president@inpaws.org
Past President	Tom Hohman	317-831-1715	pastpres@inpaws.org
Vice President	Melissa Moran	317-295-2021	vicepres@inpaws.org
Recording Secretary	Chris Carlson	317-257-5413	recsecty@inpaws.org
Corresponding Secty	Fiona Becker	317-373-3631	corsecty@inpaws.org
Treasurer	Marilyn Frohberg	317-254-1660	treasurer@inpaws.org

Chapter Leaders

Northeast	Alicia Douglass	765-623-4652	northeast@inpaws.org
Central	Amy Smith	317-690-4507	central@inpaws.org
South Central	Steve Dunbar	812-325-0968	southcentral@inpaws.org
West Central	Reni Winter	765-714-4288	westcentral@inpaws.org
Southwest	Davie Sue Wallace	812-963-3930	southwest@inpaws.org

Committee Chairs

Annual Conference	Jeff Pitts	317-363-1643	conference@inpaws.org
Communications/Website	Wendy Ford	317-334-1932	webmaster@inpaws.org
Conservation	David & Jane Savage	317-873-5083	conservation@inpaws.org
Garden Tour	Mary Miller	317-844-6682	gardentour@inpaws.org
Grants & Awards	Jackie Luzar		smallgrants@inpaws.org
Hikes & Field Trips	Mike Homoya		hikes@inpaws.org
Historian	Ruth Ann Ingraham	317-253-3863	historian@inpaws.org
Hoosier Outdoor Exper.	Amy Smith	574-229-8782	hoosier@inpaws.org
Invasive Plant Education	Ellen Jacquart	317-951-8818	invasives@inpaws.org
Journal Editors	Nancy Hill	317-283-8345	journal@inpaws.org
	Kit Newkirk	765-719-0414	journal@inpaws.org
Membership	Open		membership@inpaws.org
Native Plant Rescue	Kelly Spiegel	317-418-5489	rescue@inpaws.org
Plant Sale & Auction	Ross Nelson		plantsale@inpaws.org
Public Outreach	Karen LaMere	317-752-5444	public@inpaws.org
Youth Outreach	Cheryl Shearer	317-747-7417	youth@inpaws.org

INPAWS JOURNAL is printed on 100% post-consumer recycled paper.

PRESIDENT'S MESSAGE

Moving Forward

I am always impressed with the plant knowledge, the dedication, and the energy of INPAWS volunteers. In its fairly short history, INPAWS has earned a strong reputation among those who know us. As your new INPAWS President, I look forward to guiding this organization to new accomplishments.

Immediate Past President Tom Hohman is a hard act to follow. Tom's boundless energy for INPAWS, his seeming acquaintance with every current and potential plant nerd in the state, and his cheerful eloquence have accomplished a lot. INPAWS is on sound financial footing, with money in the bank. In fact, we have given thousands of dollars in grants to deserving organizations that advance our mission of preserving, appreciating, and using the native plants of Indiana, and educating the public about them. Our recent grantees have included high school environment classes sampling water quality and native riparian plants; land-trusts putting together financing to buy uniquely valuable natural areas for protection and stewardship; outdoor education opportunities for young children; and much more. We have also brought Professor Doug Tallamy to Indiana for lectures and tours which have helped hundreds of people to "get it" about native plants.

Tom has also worked tirelessly to support and reorganize existing chapters of INPAWS, to propagate new ones in other regions of our state, and to reach out to new potential partner organizations. All in all, he leaves big shoes to fill.

I have a few priorities as my term begins. One is to carry on the outreach to new partner organizations, so as to spread the enthusiasm for our native flora. Another is to keep open lines of communication and mutual support among our many volunteer leaders, as INPAWS grows in numbers and in ambitions. As we grow, another priority must be to update and strengthen our policies, procedures, and governance.

Lastly, I would like to encourage more frequent active participation by all of our members. I invite you to join one or more of Mike Homoya's excellent guided hikes this year, come to our Plant Sale (bring your checkbook!), attend the Garden Tour and the Annual Conference, and participate in your local INPAWS chapter.

Here's to a great year! —Art Hopkins

Photo courtesy of
ecodaddy.com

INPAWS PARTNERS

Hoosier Environmental Council

The Hoosier Environmental Council is passionate about being Indiana's leading educator and advocate for environmental issues and policies.

The Council aims to set a new path for Indiana, a path where people embrace practices and policies that dramatically reduce the footprint of industry, commerce, and agriculture on the environment for the benefit of public health, economic well-being, and the preservation of nature for generations to come.

HEC has made significant progress in protecting forests, groundwater, and lakes throughout the state, yet *Forbes* magazine ranks Indiana the 49th greenest state!

Rather than pointing fingers at those responsible, HEC directs its energies to finding new solutions and alternatives, using the tools of education and advocacy built on a foundation of good science and economics. Their goal is to make Indiana a better place to live, breathe, work, and play.

INPAWS members interested in green energy, transportation, sustainable food and agriculture, clean water, global warming, open spaces, and/or a healthy environment will find the HEC website a useful resource. Each issue is defined in the context of Indiana, the HEC position is stated, including opposing voices, and guidance is given on how to take action and which resources to explore.

Visit the Hoosier Environmental Council at www.hecweb.org.



The Lost Garden

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struggle is a certainty. I agree with the blogger about seeing pride in the woman's face and stature, and the whole scene speaks to the strength and determination required by the homesteaders on the prairie. But knowing what I do about natural history, it also speaks to me about loss and missed opportunities, especially here in Indiana where the loss of our prairies was nearly complete. In the Dakotas where this painting is set, there are still thousands of acres of never-plowed short-grass and mid-grass prairies. The eastern tallgrass prairies didn't fare so well.

At the time Indiana was settled, about three million acres were prairie, mostly concentrated in the northwestern corner of the state. In a few short decades, from the mid and late 1800s into the early 1900s, our ancestors managed to eliminate it all—a veritable lost garden of three million acres. The fertility of their deep, black loam sealed the fate of the prairies. Their soils were (and are still) among the finest farmland in the country, in the whole world for that matter. Unfortunately, our utilitarian viewpoint left no room for sentimental attachments to the wilderness and natural landscapes from which our ancestors molded their lives.

Off and on through the years, I've searched for writings about the prairies in Indiana in the early days of settlement, but there is little available. That is especially true of writings that describe what species of plants the pioneers were finding in our prairies. States further west that were settled later seem to have somewhat better written descriptions of the landscapes that were originally there, and better records of their fate as progress plowed its way westward. Despite the overall dearth of information about our prairies, I've managed to find some interesting comments, including a few that mention loss.

Here's a quote from *A Standard History of White County*, Vol. 1, published in 1915. It doesn't directly discuss loss, but implies it since it speaks of the prairie in the past tense. It also speaks of the prairie's beauty:

Those who ventured out to the prairie's edge were well rewarded at the opening of spring when Nature put forth her mantle of green and the prairie became a great flower garden...in full bloom, it presented a picture worthy of the greatest of painters to depict.

Here's another quote, this from *History of La Porte County* published in 1880, that clearly mentions loss:

Now both timber and prairie are largely under cultivation or pasturage, and bluegrass, white clover and a large number of introduced weeds from the East have taken the place of the origi-

nal flora. Industrially, this change is a very great gain, but poetically it is as great a loss.

I've always found this passage intriguing. It equates the loss to the "very great gain." The writer doesn't say "bummer" or "too bad the loss doesn't measure up to the gain." He says "it is as great a loss"—strong words coming from someone living in the midst of a Manifest Destiny mentality in the 1800s. And what about the use of the word "poetically?" It's an odd choice, showing obvious sentimentality and an artsy viewpoint that probably held little sway in an age of rampant economic, agricultural, and industrial expansion.

This whole quote is telling because it indicates a twinge of remorse regarding how much we were changing the landscape. I'm happily impressed to note that twinge.



Liatris scariosa nieuwlandii at Cressmoor Prairie. Photo by Keith Board.

Here's a quote from historian Timothy Ball regarding Lake County, written in the late 1800s:

But now all is changed except the contour of the ground.... The appearance of the prairie of 1872 is vastly unlike that of 1834. Farms and neat residences dot it all over now. It was in its native wildness and beauty then.

His comment that "all is changed except the contour of the ground" is especially interesting since it appears that he understands that a prairie without its flora is no prairie at all. Many individuals, both then and now, don't seem to make that connection.

And here's one more quote I found among notes in my files taken from books with an Indiana connection, but I didn't indicate its origin. I assume it is from an Indiana source but can't say for sure:

...to raise flowers, when the landscape round him teemed in summer with flowers of every hue and color, he thought to be a useless and needless occupation.

Those words nicely bring us back to the sentiment expressed in the title of Harvey Dunn's painting—"The Prairie Is My Garden." The prairie was an enormous, incredibly diverse and beautiful garden, yet we didn't find a way to preserve some large, representative examples of that facet of our Indiana heritage. When the prairies were first being plowed, three million acres probably seemed like they couldn't possibly be completely conquered. And even as they began to shrink, folks probably couldn't conceive that the prairies would be gone in a few short decades.

Thinking about it now, you have to wonder why we couldn't have found a way to save several thousand acres. After all, we managed to preserve remnant woodlots containing nice examples of the original flora and character of the vast eastern deciduous forest. They exist yet today as twenty-, forty-, and sixty-acre woodlots scattered throughout the state. But not the prairies. Imagine how incredible it would be if, in the prairie regions of Indiana, remnant prairie hay meadows or lightly grazed prairie pastures existed in the sizes and numbers as do the woodlots in the forested parts of the state.

In the decades since our prairies were destroyed, we have established farmland set-aside programs that leave thousands of acres of land unsown in any given year, suggesting that our rush to create tillable acres was over-zealous. Having a few sizeable prairie remnants in Indiana today would provide us with sites of important historical and biological significance, and would contribute to some level of local tourism. I'd wager that most modern-day Hoosiers don't realize that prairies were a significant part of our natural history. Many would enjoy the opportunity to stroll through a flowery grassland Eden reminiscent of that heritage. Many would decry a wasted resource. What values do you hold dear?

I sometimes wonder what the farmers, townsfolk, merchants, Sunday-morning churchgoers, liar's benches, and social gatherings of the day talked about back in the 1800s? Did the community openly regret or challenge the destruction that was taking place? Did anyone talk about what might be done to save some of the prairie? If the subject came up, did you have to be reminded that there was nothing that could be done? Did it go without saying that discussing it was taboo or heresy?

Those who know me well know that Aldo Leopold is one of my favorite conservationists.

His writings and philosophies form the basis for many of my own convictions, and I refer to his writings often. Leopold was a utilitarian, but a restrained one. He was trained and worked as a forester, a utilitarian endeavor, and is often considered the father of the profession of wildlife management. He was an avid hunter, another utilitarian pursuit. But he was also a founder of The Wilderness Society, and he fought to save the virgin forests in the Porcupine Mountains of the Upper Peninsula of Michigan, a pursuit that seems contradictory to his forestry background. Here is a quote from this fellow of seemingly contrasting conservation principles, the utilitarian and preservationist:

Sometimes I think that ideas, like men, can become dictators. We Americans have so far escaped regimentation by our rulers, but have we escaped regimentation by our own ideas? I doubt that there exists today a more complete regimentation of the human mind than that accomplished by our self-imposed doctrine of ruthless utilitarianism. The saving grace of democracy is that we fastened this yoke to our own necks, and we can cast it off when we want to without severing the neck. Conservation is perhaps one of the many squirmings which foreshadow this act of self-liberation.

—“The Farmer as Conservationist” (1939) from *The River of the Mother of God and Other Essays* by Aldo Leopold, edited by Susan L. Flader and J. Baird Callicott (1991)

Our society is still not comfortable casting off the doctrine of ruthless utilitarianism. We have made some improvements in that regard, but not soon enough for us to save any really large remnants of open prairie in Indiana. In spite of that, most of Indiana’s prairie flora and some of its fauna survives today in some smaller-sized remnants. Many of these are within the context of other associated natural communities with prairie-like floras such as oak savannas, barrens, prairie fens, and sedge marshes. Protected examples of many of these communities are preserved by public agencies and private land trusts that make it their business to save small examples of the original Indiana for future generations. Thank goodness for that! Prairies, though, are wide open communities, and here in Indiana, there are very few remnant prairies that give one a sense of the openness and vastness of the prairie landscape. None allow you to stand in the midst of a throng of brilliantly colored wildflowers and look off to the horizon in every direction. Referring back to the Leopold quote at the beginning of this article, in a sense, we have girdled the old oak to squeeze one last crop from the barnyard.

Let me leave you with some final thoughts on Harvey Dunn’s painting. I really like its beautiful historical depiction of a scene from the lives of homesteaders on the North American prairie. It shows that even in the hard-scrabble lives of prairie pioneers there was room for native wildflower bouquets to soften the rough edges of a challenging lifestyle.

On a deeper level, it is meaningful to me because it represents both the accomplishment and the potential loss achieved through the methodical, relentless application of single-minded determination. It reminds me of my disappointment in our ancestors’ failure to preserve more of Indiana’s natural features and to implement practices that would have more favorably benefitted our lands and waters. It also reminds me that our society might be served well to use thoughtful restraint in how we structure and implement our ideas, and in how we measure and judge our accomplishments. We can’t undo the past, but we can do better as we move forward. I get all that from Dunn’s lovely painting—guess I know too much about the lost garden.



***Asclepias sullivantii* with Hummingbird Moth. Photo by Keith Board.**

On a more positive note, there are a couple of sites in Lake County where you can go to observe the beauty and diversity of Indiana’s prairies. Both are small but very open with little woody vegetation to limit the mind’s concept of what a prairie should look like.

The smaller of the two is German Methodist Cemetery Prairie, yet it may be the most diverse and most beautiful, with over 100 species of plants crammed onto its one little acre. It is simply breathtaking to see in mid-May when shooting star, prairie phlox, hoary puccoon, and cream wild indigo are in flower. In the fall, prairie gentian (my vision for the splash of deep blue in Dunn’s painting) makes a brilliant blue autumn sky look dull by comparison. The dominant grass is prairie dropseed, indicative of the great quality of the site. Despite the size of this little remnant, if you squint your eyes and use

your imagination, you can envision the majesty of the original prairie wilderness reaching out to the horizon. To see it for yourself, from the intersection of U.S. 41 and State Route 2 west of Lowell, drive north about four miles to the cemetery on the right (east) side of the highway. The preserve is in the rear of the cemetery. The perimeter of the prairie is fenced, and due to the sensitive nature of this small site, please observe it only from outside the fence looking in. This site is now owned by the DNR Division of Nature Preserves, having been recently transferred from The Nature Conservancy.

Another fine prairie in Lake County is Cressmoor Prairie owned by Shirley Heinze Land Trust. This preserve is thirty-eight acres with over 200 species of plants. It is home to some of our most wonderful prairie gems including, once again, cream wild indigo and prairie gentian. Other niceties include such conservative specialties as Sullivan’s milkweed, short green milkweed, Bicknell’s sedge, and Leiberg’s panic grass. There is a theme here—high quality prairies represent wonderful collections of prairie plants. Unlike German Methodist, Cressmoor Prairie has a parking lot and trails, so when you visit, you can wander through the prairie garden. For more information about this site, including directions to find it, visit www.heinzetrust.org/Nature/CressmoorPrairie.aspx.

These sites may be small, but they contain wonderfully rich assemblages of the original prairie flora, something that is missing from many larger sites that show the results of over-grazing or other disturbances. Larger preserves such as Goose Lake Prairie and Midewin National Tallgrass Prairie in Illinois, or Konza Prairie in Kansas, are certainly worth visiting for a landscape-scale perspective of what prairie is all about. But few of the larger sites have a prairie flora as rich and as beautiful per square yard as those at German Methodist Cemetery Prairie and Cressmoor Prairie.

If you are a prairie enthusiast, do yourself a favor and drop in to see these small Indiana prairies if you haven’t already. These gardens are not lost!

Lee Casebere has worked for the DNR, Division of Nature Preserves, since 1980, applying his interests in botany, zoology, natural communities, and natural area management. Lee is a charter member of INPAWS and has served on its Council.

Sharp-Lobed Hepatica

Hepatica acutiloba

Gene Bush
Munchkin Nursery

Low expectations usually accompany Midwestern gardeners when they go for a walk in winter. Cold wet winds, perhaps some lingering snow in the north and east shadows, do not usually conjure up vivid visions of flowering perennials. While there certainly is not an abundance of bloom in late February and early March as in mid-May, there are fully opened flowers

human anatomy. Hepatica has leaves the shape of a human liver, thus the name "liverlobe." Around the late 1800s, collecting of hepatica as an herb for medicinal purposes exceeded 450,000 pounds in a single year. I can remember my father taking his spoon of dark brown liquid from a patent medicine bottle that had hepatica both in the name and the contents. The



Hepatica acutiloba. Photo by the author.

to be found in native woods and gardens. Bundling up for a winter walk can be rewarding.

The name of our local native hepatica has been recently changed to *H. nobilis* variety *acuta*. The older wildflower guides list *H. acutiloba* and *H. americana*. Now both are under *H. nobilis* as *H. var. acuta* and *H. var. obtusa*. For me, *Hepatica nobilis* was the European species, so it is going to take a while for my old brain to make the transition.

According to the doctrine of signatures, God or nature has placed a plant into the natural world for each illness of man. Those plants can often be recognized by their shapes, which resemble parts of

fact that many of the patent medicines contained a high percentage of alcohol may have helped as much as or more than the herbal remedy it carried.

The sharp-lobed hepatica (*H. nobilis acuta*) is the species I find closest to my home. Within walking distance of my garden is the Blue River with its limestone bluffs. All along those rock ledges can be found colonies of very old plants, usually in pockets of leafmold over rocky soil. I have seen a few growing beneath sheets of moss on large boulders. The prevailing color of bloom seems to be white, but on occasion lavender-blue will be seen. When watching for nice color forms, pay particular attention to the stamens. On occasion

Welcome New INPAWS Members

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ILLINOIS

Chip O'Leary

the stamens will be a contrasting color to the sepals. Blooming period is from late February to mid-March and well into April.

The flowers are actually composed of showy, three-quarter inch sepals that appear as petals. Stems are quite hairy and the fuzz is very apparent on new stems. Flower stems reach from four to about eight inches in height. Foliage is evergreen on hepatica, but very tattered by bloom time. (In late fall and early winter the foliage will turn bronze, adding to their show.) Just as blooms fully appear, the new, softly hairy leaves unfold. The amount and pattern of mottling in hepatica foliage will vary from plant to plant, just as the bloom color varies. I have seen leaves with such a high degree of mottling that I would grow the plant if it never bloomed.

The soil in my garden ranges in pH from neutral to slightly acidic over limestone. Most of my hepatica are growing in raised beds containing a high percentage of compost and leafmold. All are located in the midst of shrub and tree root competition. I have noticed over the years that seed has gotten around a bit. I am now finding hepatica in the richer soils of the shade garden. The only care I give my plants is chopped leaf mulch each fall. All plants have a north and easterly exposure from the north side of a hill.

I have *Trillium nivale* as a companion to my sharp-lobed hepatica. Sometimes they will bloom together, other times the hepatica blooms just a bit later than the trillium. When the dwarf snow trillium goes dormant, hepatica foliage will persist the remaining seasons. Trout lilies, or *Erythronium*, are also favorite companions for both flower and foliage.

Gene Bush grows and sells ornamental shade plants, including many natives, in southern Indiana. Follow his blog at www.munchkinnursery.com.

This Spring—Head For the Hills!

Nancy Hill, Next INPAWS Journal Editor

I've enjoyed dozens of wildflower hikes and talks over the years, but nothing compares to the Spring Wildflower Pilgrimage in the Smoky Mountains. It is so wonderful, so rich in quality and volume of species in the natural world, I'm continually amazed that it doesn't sell out overnight.

This annual event, now in its 62nd year, is staged in Gatlinburg, Tennessee, at the end of every April. This year's dates are April 25 to 28. All walks and hikes are within the Great Smoky Mountain National Park. For the pittance of \$75, you can choose from over 150 programs—talks, demonstrations, instructional walks and guided hikes. There is something for everyone, whether you're interested in wildflowers, trees, ferns, mosses, birds, bats, bugs, reptiles, or amphibians. There are also programs that focus on the early settlers in the area and the indigenous people and their use of native plants. The walks/programs range from 90 minutes to all-day. There are hikes to challenge the mountain goats among us and those who like a gentle one-mile stroll, or no walk at all.

The faculty for these programs reads like a national *Who's Who*: emeritus professors of botany and biology, foresters, park rangers, horticulturists, photographers, ecologists, wetland scientists, and authors. One of my all-time favorite programs was a morning walk led by world renowned

fern expert Murray Evans. He was fun and informative, yet clear, and I learned more about Midwestern ferns than before or since.

INPAWS' own Karen LaMere, Fritz Nerding, and Roger Hedge are all leading walks at this year's pilgrimage.

I have gone to the pilgrimage six times. This year will be my seventh. I have tons of memories—entire hillsides covered with white fringed phacelia (*Phacelia fimbriata*, a relative of Indiana's *Phacelia purshii*, or Miami mist) on a section of the Appalachian Trail, patches of fire pink (*Silene virginica*) on the banks along the roads, the rare yellow lady's-slipper hidden just off a trail (the word quietly passed of exactly where).

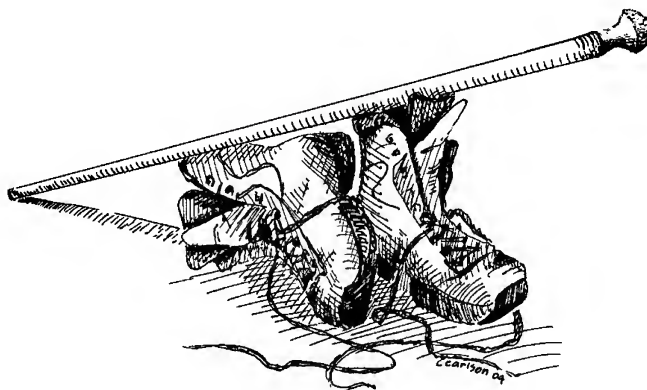
On a half-day walk around Greenbriar, we saw 71 species of plants, ferns, and shrubs. Many of the species in the park are decidedly Appalachian, but there are many Indiana natives out just a bit sooner and more plentifully than back home. On a birding motorcade I learned the calls of the Black-throated Green Warbler (zee-zee-zee-zu-zee) and the Parula Warbler (the "zipper bird"). One evening I had the opportunity to actually hear the sound of bats via an instrument that tuned down their high sonic pitch.

One trail had dozens of mature sourwood trees (*Oxydendrum arboreum*) and I later, after tasting its delicious flavor, bought sourwood honey. You can buy native plants from a variety of local vendors who exhibit inside the Gatlinburg convention center, where there are also many more vendors selling books and outdoor gear. The pilgrimage has one of the best T-shirts ever!

The week is well-organized. They've had plenty of practice. Some walks start in Gatlinburg with a free shuttle into the park. For others, you drive to a meeting point within the park. Gatlinburg is rich with reasonable accommodation, restaurants, and grocery stores for brown-bagging it.

For a detailed list of programs, leaders, and online registration information, visit www.springwildflowerpilgrimage.org.

Nancy Hill is a past president of INPAWS, a Master Gardener and amateur naturalist. She spends her time in Indianapolis and a cabin in rural Owen County.



Drawing by Chris Carlson in R.A. Inghram, *Swimming with Frogs*.

*A pebble drops into a pond.
The water ripples in concentric
circles for a moment...then
smoothes over again, leaving not
a trace. A life can be like that.
But occasionally you encounter
someone who makes a splash that
will linger long after he's gone.*

I first met Donovan Miller when he was newly retired and active in INPAWS as the chair of the Youth Outreach Committee. We collaborated on a brochure publicizing INPAWS' latest initiative, Letha's Youth Outdoors Fund, in honor of Indiana's "wildflower lady," Letha Queisser.

Quite obviously, Donovan and kids belonged together, as Donovan in retirement got in touch with his inner child, often dressing up as the Indiana State Museum's cardinal mascot to entertain the children on Earth Day and such.

Retirement also brought more time for putting hands to the soil, harkening back to Donovan's Mennonite childhood on a farm in Goshen, Indiana. He took Master Gardener training with the Marion County Purdue Extension Office and, needing to put in 40 hours of community service, landed at the Marian University EcoLab in Indianapolis, where he worked with outreach coordinator Jody Nicholson to maintain their woodland and wetland and learn all he could about Indiana native plants.

While collecting his MG service hours at the EcoLab, Donovan got wind of the City's environmental studies magnet school right next door and was curious. He wandered over to see what Cold Spring School was all about and discovered they were educating elementary school students from all around Indianapolis—many from disadvantaged backgrounds with little exposure to nature—in a building situated on 39 acres in the same White River watershed and ecosystem as the EcoLab.

Drawn to a 20 x 30 ft glass house behind the main school building, he peeked inside and saw its long metal tables vacant, suggesting the Greenhouse was not in use. It was love at first sight! Would it be okay if he gave the Greenhouse a little use? he inquired. The powers that be said that would be fine.

The Greenhouse had been built in the 1970s when Cold Spring School housed a special education program serving retarded or multiply handicapped students, ages 5 to 18, but that program had been



Mr. Donovan

phased out years ago. There was no telling how long the Greenhouse had been neglected.

Donovan wasted no time putting it back into service. He began by bringing over his many houseplants to overwinter. Then he invented projects to do with the children of the school—rooting cuttings from the houseplants, lessons on plant care, composting, how to get good soil, etc. The Greenhouse became his “playpen” as he described it, and he was never happier than when tending his flock of plants and students under glass.

He managed to rope me into a project at Cold Spring too, a native plant demonstration garden, and my association with others volunteering at the school morphed into fullfledged enthusiasm and the start of Friends of Cold Spring School, Inc., dreaming big dreams of “a premier environmental studies magnet for Indianapolis, a premier model of environmental education for Indiana.”

All the while, Donovan was at play in the Greenhouse. He was gifted with a prairie planting mix from Cardno JF New, and starting those seeds became a project with the children. Groups of five or six kids at

a time came to the glass house to fill flats with soil, scatter seeds, and water them in. Adult volunteers Robert Yahara and Michael Harris were often present to attain the optimum ratio of one adult per three children. Donovan established his own unique relationship to these inner city children; they respected him and called him “Mister Donovan.”

The prairie mix seeds germinated and thrived in the balmy Greenhouse climate, soon filling the flats to capacity. What to do? It wasn't time to plant outside yet, so Donovan and kids set about sorting the seedlings that looked alike and planted them in separate flats, in most cases not knowing what species each set of seedlings was. Recalling scenes of the Sorcerer's Apprentice, flats of prairie seedlings grew apace, soon covering the Greenhouse tables in quantities threatening to go out of control.

In time, seedlings became young plants, so that their leaves could be matched to pages in native plant field guides, and their identities began to reveal themselves. As springtime unfolded, flats upon flats of prairie natives were “grown on” to the plug stage, their 4” tall pots enabling them to develop their naturally deep roots.



Remembered

What to do with so many plants? No solution but to plant a prairie! A site was duly scoped out on the hillside surrounding the Greenhouse, and into the ground went the hundreds of plugs, planted by fourth graders and their teachers.

The next year, the idea was hatched of staging a student plant sale, where the children could take plants from seed to sale, with all the lessons on growing, publicizing, pricing, and accounting that this process implied. The plan was to grow as many plants as there were children—bedding annuals, tomatoes, peppers, and such—but of course, who would want to waste any seeds, so the result was probably more like ten times the number of children!

In the end, there were way more plants than customers for the sale, but the experience was invaluable for adults and children alike. Half the proceeds went back to the individual classrooms as discretionary funds, the other half to the school to buy supplies for next year's plant sale. Luckily, Harshman Middle School just happened to be building a community garden on the last day of school, so the flats of unsold plants served to populate their raised vegetable beds, decorated huge concrete pots in front of the school, and

were carried home in the nurturing hands of junior high kids.

The circles of effort thus initiated by Donovan kept expanding, taking in INPAWS and Letha's Fund, the children and teachers and volunteers of Cold Spring School, and a whole other project I learned of only lately: maintaining the Turner Prairie Garden at Indiana State Museum.

Then came another circle, one that emerged after Donovan announced he had lung cancer and would not survive. Brave man that he was, he drew friends and family into relationship, not just to take over duties that Donovan had to give up or to lend a hand to his wife Barbara and daughter Shawndra as his health began to fail, but also to share his journey.

Sitting around a campfire in Donovan's backyard, we told stories and got to know each other, so as to be able to support each other when the time would come to grieve. Robert Yahara and I became acquainted over weeding in the Demonstration Garden at Cold Spring School and carting off Donovan's huge collection of houseplants to be shared with teachers and classrooms and friends.

I came to know Donovan's other circles of associates, church members, extended family, and family friends at an early celebration of Donovan and Barb's 50th anniversary, and greeted them again at the memorial service that Donovan himself planned to the last detail, including the New Orleans style jazz that accompanied our exit from the hall.

I credit Donovan for showing us the way to end life with grace and intentionality, and I'm glad he made his wishes known so that we who remain could honor them. "Mister Donovan's Greenhouse" will be his lasting legacy to the children and teachers of Cold Spring School, brought back to life even as Donovan's own life was drawing to a close. He never had so much fun, nor so profound an influence, as when tending his plants and nurturing the next generation in the Greenhouse.

Donovan's example reminds us to make a splash, to live life fully as long as we draw breath.

—Wendy Ford, Editor, INPAWS Journal

Contributions in memory of Donovan Miller may be made to:

INPAWS, Attn: Letha's Youth Outdoors Fund, P.O. Box 501528, Indianapolis, IN 46250

Friends of Cold Spring School Inc., Attn: Mister Donovan's Greenhouse, Wendy Ford, Secretary, 6911 Cabernet Way, Indianapolis, IN 46278. (Note: The Friends are working with their attorney to apply for 501(c)3 nonprofit status.)

Indiana State Museum & Historic Sites, Attn: Memorials for Donovan Miller to Turner Garden, 650 W. Washington Street, Indianapolis, IN 46204.

Left: The Greenhouse at Cold Spring School, soon to be refurbished in Donovan's honor. Right: Donovan in the student-planted rain garden that he helped maintain during the school's year of renovation. Photos by Wendy Ford and Shawndra Miller, respectively.

Spring Garden Tour Preview

“Spring Landscaping with Native Plants” is the theme for this year’s INPAWS garden tour on Saturday, April 21. You’ll experience spring wildflowers in the natural setting of a wooded parkland, then head off to see how local gardeners incorporate these same spring ephemerals into their landscaping.

Flowing Well Park

This Carmel park is known for its artesian well where people from all over come to fill water containers. The well was discovered almost 100 years ago when workers were drilling for natural gas. The water flows at approximately 15 gallons per minute.

The park’s one-mile natural trail and dirt footpaths traverse 18 acres of wooded land and cross the meandering Cool Creek.

Springtime is magical here when the spring ephemerals bloom. The flowers range from vibrant Virginia blue bells to delicate Dutchman’s breeches. There are trilliums, wild ginger, and May apples. Wander through the trails and forget that you are next to a busy suburban street. See the majestic sycamore trees throughout the park with their mottled bark that shows the creamy bark towards the upper branches.

The park includes some invasive species, which offer a teachable moment: See what the much-talked-about garlic mustard really looks like.

There will be a plant identification scavenger hunt at the park.

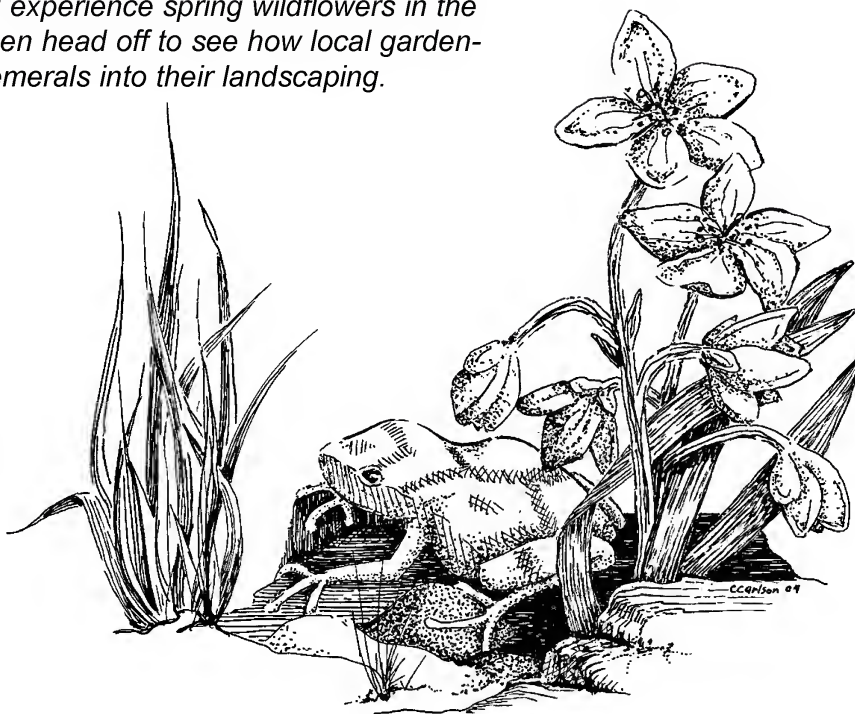
Twin Beeches

Before she knew much about Indiana’s native plants, this garden owner despaired of ever growing anything under her huge beech trees. Then Ruth Ann Ingraham participated in a plant rescue at Tutwiler Woods.

She brought home many spring ephemerals and put them under the two old-growth trees in her back yard. Over time, she was pleasantly surprised by a multitude of flowers coming up that she hadn’t expected. Turns out the soil from the rescue site contained a rich seed bank.

Now the beneficiaries of that plant rescue are not only the rescued flowers and their unseen comrades but also the owner, who loves to look at them every spring, and people who pass by to admire her gardens.

There is very little lawn in this Broad Ripple yard. Native spring wildflowers include spring beauty, harbingers of spring, Virginia bluebells, wild geranium, mayapple, trilliums, violets, bloodroot, twinleaf, Jack-in-the-pulpit, green dragon, waterleaf, and several others. Shrubs and trees include redbud, serviceberry, spicebush (male and female), American hazelnut, chokeberry, and, of course, American beech.



Spring peeper illustration by Chris Carlson in R.A. Ingraham, *Swimming with Frogs*.

Ash Tree Acre

What do you do when your yard is full of ash trees and the Emerald Ash Borer is known to be in your county?

That is the question Matt Newell faces at his home in Geist. Come see how one gardener is diversifying his yard with native plants in response to the inevitable loss of some of his ash trees.

At first glance, Matt’s yard doesn’t look too different from the rest of his suburban neighborhood. The front yard is mostly trees and grass. Upon further inspection, one sees a small island of native trees and shrubs including serviceberry, red twig dogwood, and swamp white oak. A screen of bald cypress will soon shield a neighbor’s garage and also provide food for wildlife.

Moving closer to the house, one finds a rain garden gladly accepting water from three downspouts. The rain garden features shade tolerant sedges and bottle brush buckeye under a thick canopy of ash and maple trees. Cardinal flowers bloom in the late summer adding a rich red color to the area.

In an unforested portion of the back yard is a “pollinator pasture” full of warm season prairie plants, the three years of its creation obvious by the differing maturity of the plants. The pasture has little blue stem, prairie dropseed, purple

and grey coneflowers, Culver’s root, goldenrod, and black eyed Susan. Matt tends a small vegetable garden and vineyard nearby. The asparagus plants should be sending up shoots during the garden tour.

The back of the property was planted in 2010 with about 80 trees and shrubs from the Department of Natural Resources (the “wildlife pack”) including hawthorn, crabapple, shagbark hickory, black cherry, hazelnut, American plum, pawpaw, and dogwood. After the ash die off, Matt hopes they will get enough sunlight to prosper.

The belle of a spring garden tour is his “budding” collection of native woodland wildflowers including trillium, celandine poppies, Solomon’s seal, wild ginger, Jack-in-the-pulpit, and Virginia bluebells.

Cedar Haven

This garden, located in Broad Ripple Village, is a haven for the owner as well as wildlife. It lies across the street from the White River Levee and is part of a wildlife corridor filled with many lovely tall trees.

When Linda Shikany bought this house, the yard was bare except for turfgrass and a mulberry tree. Enlisting the design skills of Chris Turner, and assisted by noted naturalist and photographer Bill Brink, who died last fall, this nature lover of Lebanese descent (whence the

"cedar") replaced most of her lawn with plants designed to attract wildlife.

"If you build it, they will come" came true in this case. Linda hears three types of owls (great horned, screech, and barred) and gets many other birds as well as bats. Red foxes, woodchuck, bald eagles, great blue herons, and hawks have been spotted along the levee, along with the usual joggers and dogs.

Although small, the property offers a prairie along the driveway (plants that can stand the heat!), spring ephemerals, unusual flower species, and a variety of trees and shrubs. There's always something of interest in this 10-year-old garden, including a native orchid, cup plant, sylvium, goldenseal, hepatica, spargelia, blood root, Indian pink, green dragon, wild ginger, twinleaf, Solomon's seal, Buddha bed, passion flower, redbud, hemlocks, and tulip tree. The gardens also include many prairie grasses.

Linda dedicates her participation in the tour to Bill Brink and plans to display some of his photos the day of the tour.

For The Birds

This avid birder transformed her urban lawn into woodland and other gardens to attract birds and butterflies at all seasons throughout the year. Betsy Wilson has certainly succeeded! Native plants bloom from February to November.

Back and front yard are filled with a lush abundance of trees, shrubs, groundcovers, grasses, and flowers arranged in pleasingly shaped islands and borders, with plants grouped and contained and displaying a good variety of shapes, heights, and colors. Many of the hundreds of species have permanent identification tags. Hardscaping includes trellises, sundials, birdbaths, a shed, and birdfeeding stations.

Even with this proliferation of plants, no complaints have been heard from the neighbors in this trim urban neighborhood near Binford (State Road 37) and 71st Street. Mark M. Holeman Inc., long-time INPAWS supporter, designed the front yard layout; Betsy designed the back yard and chose all the plants, many of them propagated by her. There are multiple woodland gardens and a vegetable garden, all planned for a succession of bloom through the seasons.

Most trees and bushes are native and include burr oak, silver maple, tulip tree, black walnut, wild cherry, yellowwood, redbud, dogwood, red buckeye, serviceberry, persimmon, inkberry, native holly (Ilex), Ohio buckeye, spice bush, itea, button bush, and hydrangeas. Most grasses are native. Expect to see wild hyacinth, bluebells, marsh marigold, iris versicolor, Greek valerian, cranesbill, blue and white baptisia, native columbine, penstemons, twinleaf, trilliums, Jack-in-the-pulpit, shrubby St. Johns wort, Bowman's root, ferns, ginger, heartleaf Alexander, and mayapple.

A few of the plants coming up for later bloom will be pipevine, white native wisteria, button-bush, native honeysuckle, royal catchfly, prairie quinine, liatris, turtlehead, butterfly weed, large-

ONCE YOU'VE SEEM 'EM, YOU'LL WANT TO BUY 'EM!

INPAWS Plant Sale & Auction "Native Plants to Attract Birds"

Saturday, May 12

Park Tudor School, Upper Gymnasium
7200 N. College Avenue, Indianapolis IN 46340
(Use the 71st Street entrance)

9:30 a.m. Pre-sale talk by Janet Cramer, Staff Naturalist for Indy Parks and Assistant Manager of Southeastway Park, on the best plants to attract birds. \$10 fee for the talk entitles ticket holders to start shopping 15 minutes before the general public and get \$10 off any auction purchase.

10:15 a.m. Plant sale and book sale, open through 1:00 p.m.

11:15 a.m. Live auction, continuing until every plant is sold.

There's something for every gardener at this popular annual event.

This year, we move to a new venue, the gymnasium of Park Tudor School, which is spacious, well lit, and has ample parking. The gym will be chock full of Indiana natives to plant in designed landscapes or natural areas, and INPAWS members will be on hand to answer questions and help you shop.

Plants for the sale and auction are donated from INPAWS members' own collections, plant rescues, and local nurseries specializing in native plants. The selection is different every year. The choicest, rarest plants are set aside for the plant auction, an entertaining and informative opportunity to learn about Indiana natives, as each offering is introduced by native plant experts.

Alongside the plant sale, look for select books on plant families, naturalistic gardening, conservation, and related topics. INPAWS logo items such as T-shirts and caps will also be available for purchase.

New this year: a silent auction of native plant related items. Plant sale chair Ross Nelson is seeking interesting items for this; please contact him at plantsale@inpaws.org.

Ross could also use more volunteers, and wagons or carts to help transport plants to cars. To help out, sign up at Volunteer Spot, <http://www.volunteerspot.com/login/entry/323456345555780109>.

leaf aster, monarda, stiff and other goldenrods, prairie dropseed, little bluestem, mountain mint, meadow rue, compass plant, coneflowers, flowering raspberry, Culver's root, wild senna, Joe Pye weed, bottle gentian, native monkshood, and swamp milkweed.



To participate in the garden tour, email gardentour@inpaws.org and let Mary Miller know you're coming.

She will send addresses and directions to the gardens a week or so prior to the event.

A Picture Book and a Second Look

Barbara Plampin, PhD, Shirley Heinze
Land Trust

"What a lot of Solomon's seal!" we exclaimed as we stumbled, hot and tired, out of a dim swamp forest north of a Porter County bike trail into dazzling sun. At trail's edge, a soldierly mass of delicate miniature "treelets" stood at attention. That each tree had two branches instead of a single arching stem escaped our notice, as did the absence of flowers or fruits. The parallel-veined leaves made us confident we were looking at a *Polygonatum*.

Chancing on the plants again on May 13, 1993, I stepped back, startled: the "treelets" were merrybells, aka little or wood merrybells, or wild oats (*Uvularia sessilifolia*). (Solomon's seal and *Uvularia* are similar, being paired in Liliaceae keys.) I didn't shout "Eureka! Page 103 in 'Peterson!'" But I do owe the recognition to bedtime browsing in that book, and the page is indeed 103. See the color picture lowest right. I was thrilled because merrybells hadn't been seen in the Chicago Region since 1891 when Higley and Radin reported it as rare from Cook County, Illinois.

Merrybells is not state listed; Deam reports it from Monroe County and farther south in Indiana. Still, these plants are disjunct, an island some distance from populations ranging, according to Michigan botanist the late Ed Voss, "From the Porcupine Mountains (and Minnesota)...south through Wisconsin to the southern states, and from Saginaw Bay southward to northeastern and southern Ohio and beyond, eastward to New England" in "an essentially circular pattern." Voss does not mention Indiana.

Yes, the flowers did resemble the one in the color plate on page 103, except the one-to-a-plant pendant flowers had withered from yellow (some say cream) to greenish brown or straw. Unlike



Merrybell blossom (*Uvularia sessilifolia*). Photo by Thomas G. Barnes.

Polygonatum leaves, merrybells' are sessile, clustering mostly at branch tops, though a single leaf grows at branch fork. Indiana's frankly much prettier and taller large-flowered bellwort (*U. grandiflora*) and perfoliate bellflower (*U. perfoliata*) have perfoliate leaves. Still, merrybells could look attractive massed in a wildflower garden. I sent a specimen to the Morton Arboretum in Lisle, Illinois.

I'm asleep. The telephone shrills. It's 7:00 a.m. The caller is Dr. Gerould Wilhelm, Morton Arboretum botanist, voice very excited. "Where did you find it? Is it native? From an abandoned garden?" I fearfully report a lone garden iris up

the trail, then mention Higley and Radin's 1891 report. The *Plants of the Chicago Region* entry (Dr. Wilhelm, junior author) decides merrybells is native and calls the discovery "remarkable."

Despite the local utility's tree cutting and a bike trail renovation, three separate merrybells colonies still flourish in full sun along about 250 feet of trail. Associates include marsh shield, sensitive, and cinnamon ferns (*Dryopteris thelypteris pubescens*, *Onoclea sensibilis*, *Osmunda cinnamomea*), mayapple (*Podophyllum peltatum*), and, surprisingly, shade lovers like Canada mayflower (*Maianthemum canadense interius*) and star flower (*Trientalis borealis*).

Later, when we helped the Indiana Dunes National Lakeshore botanist collect seeds to propagate, we found the four-to-thirteen-inch merrybells plants holding on in duff below an overstory of goldenrod (*Solidago* spp.) and up-to-14-foot hollow and other Joe Pye weeds (*Eupatorium fistulosum*, *Eupatorium* spp.). The three-angled capsules were few. Seeds did not germinate, perhaps because of premature collection.

I've yet to visit the site early enough to find merrybells with fresh yellow flowers. The published dates, June 12 to June 19, are a bit late.

Some Books

Higley, W. K. and C. S. Radin. *The Flora of Cook County, Illinois, and a Part of Lake County, Indiana*. Bulletin Chicago Academy of Science: 2:1-168, 1891.

Peterson, R.T. and M. McKenny. *A Field Guide to Wildflowers: Northeastern and North-Central North America*. The Peterson Field Guide Series. Houghton Mifflin, 1996 (1968).

Swink, F. and G. Wilhelm. *Plants of the Chicago Region*. Fourth edition. Indiana Academy of Science: Indianapolis, 1994.

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We have done our best to include every donor who gave in 2011 or 2012 and was not previously mentioned in INPAWS Journal. Our apologies if we missed you. Please let us know. (Donations honoring Donovan Miller will be published next issue.)

Letha's Youth Outdoors Fund supports trips for school and youth groups to experience nature in an educational context. It also supports youth-initiated activities that bring them in closer contact with nature. Preferred groups are those with the least access to wholesome experiences in the natural environment.

You may donate by sending a check to INPAWS, Attn: Letha's Fund, P.O. Box 501528, Indianapolis, IN 46250.



Cullowhee Native Plant Conference Offers an Educational Opportunity

Since 1984, the annual Cullowhee Native Plant Conference has been attracting nature enthusiasts to the Appalachian Mountains in July. The aim of the conference is to increase interest in and knowledge of propagating and preserving native southeastern plant species in the landscape.

All activities take place in or surrounding the town of Cullowhee, North Carolina, the home of Western Carolina University. Located just southeast of the Great Smoky Mountains National Park, the area provides breathtaking views, a variety of flora

not always found in Indiana, and many natural sites to explore. Three and a half days of activities include a variety of field trips, seminars, workshops, and the availability of related merchandise and plants native to the Carolinas.

Fieldtrips are often one of the greatest attractions for conference attendees, offering a chance to learn hands-on about the region's ecosystems. Past field trips have included canoeing, hiking, photography tips, and bus tours. Depending on the trip, one might experience encounters with waterfalls, carnivorous plants, or even Native American cultural sites.

For more information or to sign up to attend the conference, visit <http://wcu.edu/6371.asp>.

Proud to Be an INPAWS Member

As many of our members have heard, there were technical difficulties with the credit card machine used for the Book Sale at our 2011 Annual Conference. As a result, all transactions were deleted, and INPAWS faced the prospect of a loss over \$4,000. However, paper receipts provided the names of those purchasing books using a credit card and the amount of purchase. These attendees were contacted and the situation was explained.

Then a truly wonderful thing happened—87% of those contacted responded with a check covering their purchase within two weeks. The remainder has since been received.

What a fantastic organization!



Panther Town Waterfall and blooming rhododendron are just two sights you can expect at Cullowhee Native Plant Conference. Photos by Jackie Luzar.

Friesner Launches New Research Aid on Marion County Flora

Friesner Herbarium, Butler University, is pleased to announce the addition of the "Marion County Flora Searchable Database" to its redesigned website. As part of Friesner's mission to explore and document Indiana's flora, Herbarium staff have conducted a series of long-term studies of the flora of Marion County and the city of Indianapolis.

Using our archive of historical plant specimens, recent floristic inventories, and monitoring of native plant installations to better understand our urban wild plants, we have developed a searchable photo and information database.

Visit our site and the database at www.butler.edu/herbarium. The Marion County Flora Database can be found in the "Important Information" column, or by clicking on Projects, then Marion County Flora, and Flora Search. You may search by scientific name, common name, and/or location where plants were found. Our database contains records for approximately 1,000 species, nearly 70% of which are Indiana native plants.

In addition to the Marion County Flora Database, there are also sections contain-

ing photos and info for Trees, Wildflowers, and Prairie Plants found on the Butler University campus, as well as general information helpful in tree identification and prairie ecology. An extensive Links section connects to other botanical resources.

You will notice that not all species in the database have photos associated with them, and this is where YOU come in! We need your help and are requesting submissions of photos to help populate our database. Our goal is to have photos and information for every species. This will be a useful resource for the public, and INPAWS members are a vital link to this outreach. Our hope is that eventually we will be able to expand the database to include all species found in the state of Indiana.

If you would like to contribute one or more photos for our database, please contact me at mmoore@butler.edu. You will be credited as the photographer on any submissions that we use. Thank you for your assistance.

—Marcia Moore, Herbarium Assistant

Botanist Ed Voss Wrote the Book on Michigan Flora

Edward G. Voss, professor emeritus of Ecology and Evolutionary Biology at the University of Michigan and a legendary teacher at the U-M Biological Station, died in February, just three days before the release of his latest book, *Field Manual of Michigan Flora*, co-authored with Dr. Anton A. Reznicek, curator of vascular plants at the University Herbarium. According to the publisher, the new *Flora* is the most up-to-date guide available for all seed plants growing wild in Michigan.

Jim McCormac, biologist with the Ohio Division of Wildlife, who considered Voss a mentor, writes. "[W]hat Ed did throughout his career that was at least of equal importance to his academic work was his encouragement of others... For years, other budding young botanists and I would make annual pilgrimages to Ann Arbor to visit Ed and his colleague Tony Reznicek. We would come bearing sheets and sheets of 'mystery' plants—speci-

mens that, try as we might, we could not satisfactorily attach a name to. Ed would always, with great patience and never a trace of condescension, work us through our mysteries until a name was arrived at. Those of us who made these journeys to The Man, learned not only a great deal about identifying plants, but also how to encourage students."

The full obituary, excerpted here, can be found at http://www.lsa.umich.edu/eeb/news_events/news/newsDetail.asp?ID=129

INPAWS Journal in Capable New Hands

This is my last issue of *INPAWS Journal*. With the next issue, I'm handing over control to the dynamic duo of past INPAWS president Nancy Hill and past Speakers Bureau chair Kit Newkirk.

Both have excellent credentials. A gifted writer and organizer, Nancy has recently completed advanced studies in creative writing at IUPUI. Also a gifted writer, Kit has a masters in Journalism and has just returned from three years in China, where she taught English and journalism at Sun Yat Sen University. Nancy will preside over the editorial programme, Kit over layout and photos. I can't think of a more competent team.

It's been a joy to work on the *Journal* for the past seven years. I've learned much about our organization, about native plants, and about what INPAWS can do to make a difference for Indiana.

I want to thank Becky Dolan for double-checking plant names, and especially our proofreader Amy Perry for her eagle eye and fine-tuned editorial sensibilities. She always made things better.

I'm proud to have been able to showcase the knowledge and writing talent of our INPAWS members in articles submitted for publication. This newsletter has been around since INPAWS's very beginnings, and I look forward to indexing back issues so that we can take full advantage of this rich resource.

I encourage all of you to continue thinking of *INPAWS Journal* as your voice

Coming Up

April 14
INPAWS Hike: Fort Benjamin Harrison State Park, Indianapolis, led by Perry Scott, 10:00 a.m. to 12:30 p.m. EDT

April 21
INPAWS Spring Garden Tour, Central Indiana, 10:00 a.m. to 4:00 p.m.

May 5
INPAWS Hike: Forest Wildflowers of Kokiwanee Preserve, Wabash County, led by David Hicks

May 12
INPAWS Plant Sale & Auction, Park Tudor School, Indianapolis, 9:30 a.m. to 1:00 p.m.

Watch for announcements of INPAWS events in the mail, via email, and on the INPAWS blog at www.inpaws.org.

Additional events not sponsored by INPAWS are posted on our website in the Calendar of Events under the heading "Gatherings."

for conserving and preserving our native flora, advocating on behalf of biodiversity, presenting quality information to our membership, and inspiring the next generation of environmental stewards.

—Wendy Ford



Indiana Native Plant & Wildflower Society

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MC-IRIS UPDATE

Go Green, Grow Native!

*Ellen Jacquart, Monroe County—Identify
and Reduce Invasive Species*

A few years ago, concerned landowners and land managers in Monroe County got together to form Monroe County—Identify and Reduce Invasive Species, or MC-IRIS for short.

One of the first things we did as a group was to list the worst invasive plant species in the county. It was the usual list of suspects—Asian bush honeysuckle, Japanese honeysuckle, multiflora rose, and so on. What struck us when we looked at the list was that 9 of the 10 worst species were deliberately introduced for landscaping or wildlife habitat reasons (the only one that wasn't deliberately introduced was Japanese stiltgrass, an unintentional introduction through packing material).

It turns out that's about average. Sarah Reichard of University of Washington found that 86% of the woody invasive species in the U.S. came from landscaping, and another 14% came from agriculture or production forestry.

Enough to raise your eyebrows, isn't it? It made us think hard about ways to try to decrease these deliberate introductions of problem species. We got a suggestion from our friends in Southern Indiana Cooperative Weed Management Area—why not encourage retailers to stop selling invasive plants and sell native plants instead? And so Go Green, Grow Native was born.

It's a pretty simple program. We contact plant retailers and tell them that the Go Green, Grow Native program can reward them in two ways.

First, if they sell native plants, we will provide them with free promotional materials about native plants. This includes signs, plant stakes, bench tape, and other materials with the Go Green, Grow Native logo and information on native species, as well as brochures with more information on invasive species and non-invasive alternatives.

Second, if they agree to stop selling all invasive species, which we define as those species on the Invasive Species Assessment Working Group list (<http://www.in.gov/dnr/4619.htm>), we'll also add them to the INPAWS Retail Sources list (<http://www.inpaws.org/landscaping/sources-of-indiana-native-plants/>).

To be able to provide these promotional materials, of course, we needed funds to buy them. We made a request to INPAWS to provide the funds needed, and they generously provided \$2,000 to start the project.

We started with five Monroe County plant retailers last year—Mays Greenhouse, Twin H Tree Farm, Linnea's Greenhouse, Stranger's Hill Organics, and Bloomington Hardware. Each received the Go Green, Grow Native promotional materials they wanted to draw attention to the natives they were selling, and two of them—Linnea's Greenhouse and Stranger's Hill Organics—were also certified "invasive free" and added to the INPAWS Retail Sources list.

Through the summer, we visited the retailers to see how the program was working. We learned that "native" had a much broader definition for some retailers, as some were including any species native to the U.S. That's not surprising. If you visit your local or on-line plant vendors, they rarely specify where a particular species is from—just that it's native to U.S. We clarified that our intent was to promote species native to Indiana, those adapted to our climates and soils, and provided information on which species they sold were actually native to Indiana.

At the end of the 2011 season, we surveyed the retailers about their involvement in the program. All five responded that they'd like to be involved again, and that their customers had a positive reaction. We also got helpful suggestions for other promotional materials, like 5 x 7 inch signs that will fit standard sign frames.

This year, we've extended the invitation to all the plant retailers in Monroe County to join in Go Green, Grow Native. We also invited the original five retailers to join again, along with a suggestion that they consider dropping a few of the invasive species they sell. We had a great response from Mays Greenhouse in particular, who agreed to stop selling yellow floating hearts and Norway maple (once the last few trees are sold).

Step by step, we're hoping we can move retailers away from invasive species and towards native species in Monroe County. We're also hoping that other cities or counties in Indiana are interested in joining the Go Green, Grow Native program. Please contact Ellen Jacquart if you are (ejacquart@tnc.org).



MC-IRIS plant sticker.



inpaws journal

Indiana Native Plant and Wildflower Society

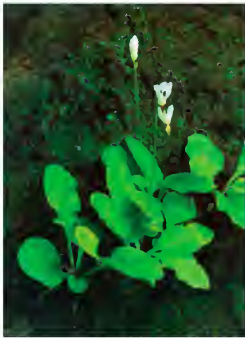
Summer 2012

Denizen of the Dark

French's shooting star occupies a lonely niche

by Michael Homoya

Plant Profile



"...one of the most attractive and interesting members of our flora, as well as one of the rarest."

Turkey vultures soar overhead in ever-increasing numbers; breeding chorus frogs and spring peepers create a deafening din from woodland vernal pools; "fibree" calls of the eastern phoebe ricochet from cliff to cliff in rugged sandstone canyons -- all of these are welcome signs of the early spring season in the hill country of south central Indiana. Another welcome sign of spring, albeit somewhat less dramatic than the previous examples, is the emergence of woodland wildflowers known to botanists as spring ephemerals. Plants classified as spring ephemerals are the "here today-gone tomorrow" variety of wildflower. Their entire life cycle is often completed during the first few weeks of spring, only to disappear until re-emergence the following year. Fortunately, spring ephemerals are typically quite common in southern Indiana woodlands, providing a spectacular floral display unrivaled anywhere in the natural landscape of Indiana. Literally carpeting the forest floor are species such as toothwort, trout lily, Dutchman's breeches, spring beauty, harbinger-of-spring and squirrel corn.

Not all of the early spring flowering plants of Indiana's hill country are ephemeral, however. Some species persist throughout most, if not all, of the spring and summer seasons. One such plant, the French's shooting star (*Dodecatheon frenchii*), is one of the most attractive and interesting members of our flora, as well as one of the rarest. A member of the primrose family, French's shooting star is similar to its only Indiana relative, the common shooting star

(*Dodecatheon meadia*).

Both are perennials, each having a basal rosette of leaves and a cluster of pink or white flowers which resemble tiny shooting stars. The French's shooting star can be distinguished from the common shooting star by its thin, light green leaves, each with an abrupt narrowing of the lower leaf blade into a stalk. The common shooting star has thicker, darker green leaves which lack the abrupt narrowing of the leaf blade and hence, have no noticeable stalk. As well, French's shooting star occurs only in a

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very specialized habitat, whereas the common shooting star occurs in a great variety of habitats.

Sandstone cliff overhangs (also called rock-houses or shelter bluffs) and ledges are the only environments where French's shooting star have been found. These environments are normally quite dark, sheltered from the wind and relatively cool and moist. Most kinds of plants do not do well under these poorly illuminated conditions; indeed, French's shooting star has few, if any other, species as companions. Apparently this is a good example where the

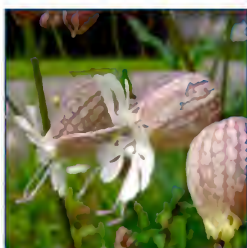
Michael Homoya is a plant ecologist and botanist for the Indiana Division of Nature Preserves, a position he has held since 1982. He has two degrees in botany from Southern Illinois University. Regarded as one of the finest field botanists of the Midwest, he is author of Wildflowers and Ferns of Indiana Forests: A Field Guide (IU Press, 2012) and Orchids of Indiana (Indiana University Press and Indiana Academy of Science, 1993).

Denizen - continued on page 3

Science or Fiction?

Scientists coax flowers from Pleistocene Seeds

by Patricia Happel Cornwell



© Dan Tenaglia

Indiana natives bladder campion, fire pink, and star campion are related to 32,000-year-old Siberian seeds resurrected by scientists

It's the stuff of science fiction. Flower seeds lie dormant in the permafrost of Siberia for 32,000 years, buried and forgotten by an Ice Age squirrel and unearthed by Russian scientists in the third millennium. In their laboratory, they coax the seeds to germinate, and the plant grows and flowers. From this experiment they will go on to "resurrect" other Pleistocene species – and not just flowers. They hope to find viable frozen tissue of such animals as the mammoth, as well as that squirrel that never returned for its buried seeds, so that they can bring those species back to life as well.

Scientists at the Institute of Cell Biophysics of the Russian Academy of Sciences published their account of the regeneration of an arctic *Silene stenophylla* plant in a recent issue of Proceedings of the National Academy of Sciences of the United States.

The *Silene stenophylla* is the oldest plant ever to be regenerated, and its modern counterpart – narrow-leaved campion – still grows in the same area of northeastern Siberia. Scientists say the specimen growing in the Russian lab is fertile, having produced typical flowers and viable seeds. It has opposite leaves and white flowers with five united, notched petals.

The research team found the *Silene* seeds in one of several fossilized squirrel burrows in an ice deposit on the bank of the Kolyma River. The animals had lined their burrows first with hay, then with fur, creating a perfect "cryobank." Soon after the seeds were cached, the burrows were buried with windblown earth. The seeds were found 125 feet below the tundra in layers that also contain bones of mammoth, woolly rhinoceros, bison, deer and horse.

The modern version of *Silene stenophylla*, narrow-leaved campion, is not found in Indiana, but it is found in the northern US as far south as the Rocky Mountains. There are 300 species of *Silene* worldwide, 15 in Indiana alone. Campions (*Silene*) are cousins of pinks (*Dianthus*), both genera being in the

Caryophyllaceae family. The relation is visible in the similarity of their flower structure.

In Indiana, the *Silene* genus includes plants as diverse as the fringed, white-flowered star campion (*Silene stellata*), bulbous bladder campion (*Silene vulgaris*), night-blooming evening campion (*Silene latifolia*), brilliant red fire pink (*Silene virginica*), and six species of catchfly.

The Russian team plans to attempt to revitalize other extinct plant forms. Both Russian and Japanese scientists are racing to find preserved mammoth tissue in Siberia, in hopes of being the first to regenerate an actual Ice Age

"seeds were found 125 feet below the tundra in layers that also contain bones of mammoth, woolly rhino, bison, deer and horse."

mammoth.

This brings up an interesting question. If 30,000-year-old species of animals and plants are introduced into the modern ecosystem, will they integrate themselves seamlessly into our fauna and flora? Or will they elbow their way in as "exotic invasives"? We all know the old adage that a weed is a flower in the wrong place. Will these ancient species become pests because they are in the wrong time?

Patricia Happel Cornwell grew up on a farm in Floyd County, where she first became enamored of wildflowers. She is a graduate of Spalding University, Louisville, and the former women's editor of the New Albany Tribune. She and her husband John live on 19 acres registered as a National Wildlife Federation Certified Wildlife Habitat in rural Harrison County, where a neighbor child nicknamed her "Flower Lady." She became an Indiana Master Naturalist in 2010.

Dime at a Time for INPAWS

Late breaking news!

Whole Foods Markets has chosen to support INPAWS during July, August, & September at both central Indiana locations. The company offers 10¢ per bag to customers who reuse their own bags. Customers can accept their refund, or direct the cashier to donate the cash to the store's chosen non-profit through the One Dime at a Time program. The Whole Foods Markets are located on east 86th Street in Nora and in Clay Terrace in Carmel. 🌱

Denizen *from page 1*

adage "to each his own" is applicable in the natural world, for French's shooting star seems to be quite happy by itself in an environment other species avoid.

Depending on weather conditions, French's shooting star emerges from the sandy soil below sandstone overhangs as early as the month of March. As the temperature and day length increase, plants develop rapidly until flowering occurs in mid-April to early May. At flowering time the leaves are fully developed, bearing a striking resemblance to certain kinds of domestic leaf lettuce. This resemblance helps to explain another vernacular name for the plant, cliff lettuce. It is not known if the leaves are even edible, let alone desirable for a salad or greens, but one must admit they do look appetizing! Collecting and eating the leaves are strongly discouraged however, given the rarity of the plant and the unknown health effects from ingestion. As summer progresses, the leaves begin to lose their vigor, turning yellow and ultimately withering away, leaving only a dried stalk and seed capsules as evidence of the plant's presence.

French's shooting star is named for its discoverer, George Hazen French, a Southern Illinois University professor who collected the plant in the Shawnee Hills of southern Illinois in 1871. For many decades after French's discovery, it was thought that the species grew only in southern Illinois, but it is now known that it also occurs in a few isolated areas of Arkansas, Indiana, Kentucky and Missouri. Interestingly, a former student of a colleague of Dr. French's was the

first to recognize the occurrence of French's shooting star in Indiana. Dr. Julius Swayne, a native of Southern Illinois, ventured into the rugged landscape of Crawford County, Indiana, in 1976 on the hunch that French's shooting star could be found. His hunch was quite right, as he found plants during his first day out!

By 1986, the Division of Nature Preserves had learned of 12 different locations for the species. Today there are almost 30, but they nonetheless occur within a radius of about ten miles, all confined to Perry and Crawford counties. The



plant is rare throughout its entire range and the Indiana DNR, Division of Nature Preserves allots it State Rare Status. Measures have been taken to protect some of the Indiana populations (one site was purchased with funds from the Indiana Natural Heritage Protection Campaign).

French's shooting star is truly a botanical treasure. If you are fortunate enough to see it, take great care in leaving it and its environment as undisturbed as possible. This will help ensure the continued existence of Indiana's most attractive denizen of the dark.

Reprinted from Outdoor Indiana magazine with the Indiana DNR's permission. Subscribe for \$12 for six 48-page full-color issues at OutdoorIndiana.org or by calling (317) 233-3046.



Whole Foods Markets will collect donations for INPAWS during July, August, and September.

Also called "cliff lettuce," the beautiful and rare French's shooting star prefers sandstone cliff overhangs — dark, sheltered, cool, and moist — where few other plants find enough light.

INPAWS Historian

Interview

*INPAWS historian Ruth Ann Ingraham shows off a favorite native that volunteered in her garden. *Aralia racemosa* or American spikenard can grow to four by six feet tall and puts on umbrellas of airy white flowers followed by purple berries.*

Ruth Ann Ingraham, one of INPAWS' founders, past president, and current historian and Nancy Hill, INPAWS Journal editor, had the following email conversation:

NH: Ruth Ann, you've worn lots of INPAWS hats after being one of its founding members almost twenty years ago, and you're still one of its most active volunteers. What are some highlights that stand out for you in your many years of INPAWS involvement?



RAI: Our tours and field trips, including two overnight tours, one that took us to St. Louis and the Missouri Botanical Gardens with Kay and George Yatskevych as our guides (a superlative experience all around) and a 2010 trip when we visited several gardens in the Chicago region. Everyone on that trip agreed we should do something similar again. We're still waiting for someone to take it on.

Kevin Tungesvik planned our early field trips, many of which exposed us to prairie plant remnants in the northwest quadrant of the state. This was eye-opening to me and influenced me to create a small meadow next to my cabin in Brown County. More recently, Mike Homoya has planned our excursions that take us all over the state. I've enjoyed the wildlife of dunes, fens, bogs, seeps, prairies, swamps, forests.

I also think we give so much to the community. INPAWS and Letha's Fund for Youth Outdoors

have made small and large grants that total in the tens of thousands of dollars. Our monies have helped schools establish native plant gardens, contributed to the ability of land trusts to save valuable tracts of land and gotten kids outdoors in nature.

NH: If money wasn't a factor (which of course it always is), what would be your dream INPAWS event or trip?

RAI: I love Door County, Wisconsin, and hope INPAWS could someday go there to visit the Ridges and the nature center. I understand that pink lady's slipper orchids bloom in profusion in late spring.

NH: Do you think INPAWS as an organization has had a pivotal moment and if so, what is it?

RAI: Yes. It was in 2008 when Douglas Tallamy was the keynote speaker at the Annual Conference. I remember saying afterwards that his passion and scientific approach brought everything we stood for together. What we as an organization had been striving for made sense and we were on the right track. And who wouldn't plant an oak tree, or several, after hearing Doug speak? We have helped bring him back to Indiana twice since then, maybe more than that. He (and immediate past-president Tom Hohman) can be credited with stimulating interest that added two new chapters in the southwest and northern regions of our state.

NH: Ruth Ann, you are the INPAWS Historian. In one sentence, what is this job?

RAI: I keep a repository of the INPAWS history going back to its very beginning in 1993 – minutes, mailings, journals, annual conference agendas – and I compile an annual summary for anyone who's interested.

NH: What tasks go into this?

RAI: I organize and maintain several three-ringed binders filled with information from our early years, when everything was documented on paper. More recently, Board and Council minutes and financial reports are distributed electronically and I store those in my computer which I back up regularly to an external hard drive. With the help of INPAWS member Vaughn Bidwell, we plan to make duplicates of everything. We're seeking the advice, and possible assistance, of the Indiana Historical Society. This will be a wintertime project.

Historian - continued on page 6

What's On Your Mind?

Wild Ideas

By Patricia Happel Cornwell, Master Naturalist

If you're reading this INPAWS Journal, it's a fair bet you're fascinated by the beauty and complexity of plants. You probably have a shelf or two of plant books that you pore over when a UGO (Unidentified Growing Object) shows up in your yard or woods. Perhaps you've searched the web, looking for information about a wildflower or tree. We just have to know, don't we?

INPAWS wants to help you find answers to your plant questions. I have volunteered to scout out the answers if you, gentle readers, will provide us your burning questions. I'm a passionate amateur botanist and an Indiana Master Naturalist and, as a longtime journalist, a pretty good researcher.

For starters, here are a couple of questions that occurred to your editors and me.

Q: If I pull up invasives like garlic mustard by the roots, do I have to put them in a plastic bag to keep them from germinating, or can I just let the uprooted plants lie where they fall?

A: It depends. If the plants are newly blooming, it's pretty safe to let them lie where you pull them up. But look closely to see if any of the flowers are starting to go to seed. If there are seeds forming on the flower heads, get that plastic bag! Otherwise, you'll just be pulling garlic mustard in the same place every year. This applies to other invasives, too. Remember that garlic mustard is a biennial, so one year's efforts will not suffice to eradicate it. Long-term attention is necessary to deplete this pest's seed bank.

Q: I have a shady area in my garden that has spring ephemerals (Virginia bluebells, bloodroot, bellwort and trillium). What can I plant with them so I don't have a bare spot in July?

A: The bad thing about a "bare spot" is that something undesirable will fill it if you don't. If you plant ferns among your spring ephemerals, they will be green and shapely when the ephemeral foliage dies. You might try Christmas fern (*Polystichum acrostichoides*), wood fern (*Dryopteris spinulosa*), or dainty maidenhair spleenwort (*Asplenium trichomanes*). These do not have crowding habits and are nearly evergreen.

Another strategy is to interplant ephemerals with later-blooming perennials. I love prairie (or "downy") phlox (*Phlox pilosa*), which doesn't mind shade as long as it gets morning sun; its tall stems yield pink blossoms April to May. An excellent shade-lover is white foamflower (*Tiarella cordifolia*), which blooms April to June. Great blue lobelia (*L. siphilitica*) thrives in moist, dappled

shade and flowers in August and September. If your shady area is at the edge of a woods, like mine, you can get bursts of summer color with lavender wild bergamot (*Monarda fistulosa*) from June to September, orange jewelweed, aka spotted touch-me-not, (*Impatiens capensis*) from July to October, and showy purple New England aster (*Aster novae-angliae*) in September and October.

Now it's your turn. What's on your mind? E-mail Pat at flowerfeet@hughes.net and be sure to type "INPAWS Wild Ideas" in the subject line. Along with your detailed question, be sure to include your name, city or county, and a phone number. She may need to e-mail or call you for more details.

New INPAWS Members

North

Kristi Bly
Mary Davis
Steve & Cookie Ferguson
Gae Holtzman
Lucie Martin
Steven & Kate Shantz
S. Jeanne Spears

Southwest

Nancy Gehlhausen
Jane & Gregg McManus

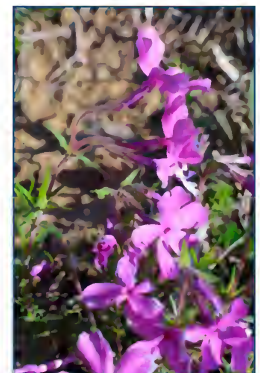
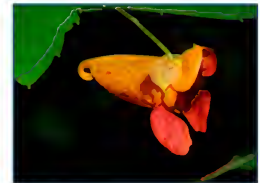
West Central

Michael Huft
Charlotte Gyllenhaal

Central

Anne Altor
Andy & Cheryl Andrews
Susan Fordyce
Jackie Foster
Andrea R. & Mike Habeck
Rita Hupp
Jeanette Jefferis
Christi J Kramer
Shawndra Miller
Katherine Newkirk
Mary Jane Olinger
Dan & Paula Shepley
Marilyn Smith & James Farley
Teresa Trierweiler

Native Plant Q&A



Jewelweed (top) and downy phlox and are useful natives to interplant with spring ephemerals in the shady garden.

Steven J. Baskauff – bioimages.vanderbilt.edu

Letters

Wendy Ford, volunteer
extrordinaire,
posed with Ken
Remenschneider
during a work day at
Cold Spring School.

To the Editor:

I want to applaud the 2012 Spring issue of the INPAWS journal. As usual, after receiving it in my mail I immediately sat down and read the journal cover to cover. I loved Lee Casebere's opening essay which combines his love for native flowers with art, literature and history. Lee expands our minds to picture the way it was during early settlement days and reminds us to enjoy and protect the remnants that remain in Indiana.

From time to time, while serving in one position or another with INPAWS, I have received native plant society newsletters from around the coun-



David Ford

try. Ours is the best; the most recent one serves as a prime example.

Wendy Ford, thank you for serving as the INPAWS journal editor for the past seven years. And welcome to Nancy Hill and Kit Newkirk who will coordinate our upcoming issues. INPAWS has the very good fortune of attracting bright and creative people, committed to sharing information in a visually appealing format, to step into these roles. Hooray!

Ruth Ann Ingraham
Historian



Historian *continued from page 4*

NH: How does INPAWS and its membership benefit from having historical records?


RAI: INPAWS is unique in the state of Indiana. Our organization is the first devoted to understanding the critical role of native plants in our environment. It's important to be able to look back to our beginning – who made it happen, what were the objectives – and then review what we've done over the years to fulfill those well-considered goals.

It's interesting to realize that invasive plant species were not part of our lexicon in 1993. Now, facing down alien species is one of our primary roles. Central Chapter even has an active in-the-field SWAT team that eradicates noxious invasives.

NH: I know you as many people – a writer, an activist, an organizer and volunteer, a gardener,

**An early INPAWS field trip
influenced Ruth Ann to create
a small meadow next to her
cabin in Brown County.**

a world traveler, a curious student of the natural world, a mother and a good friend to many. What gives you the most joy today?

RAI: Hmmm. Sipping a cup of hot coffee on the deck of my Brown County cabin as dawn breaks and the avian chorus begins. Also going on mini-trips with my Pittsburgh grandson, Connor Gable. Last year we attended a Marine Science Camp near Chincoteague National Wildlife Refuge, Virginia. 

Invitation

The next two board and council meetings of INPAWS will be August 14 and November 13 at 3 p.m. at the offices of the Nature Conservancy in Indianapolis. Any INPAWS member is welcome to attend.

INPAWS Annual Conference 2012

It's all about the plants

Once again, a highlight of this coming fall will be a delightful Saturday spent mingling with friends, meeting new friends, and learning about many facets of native plants: INPAWS' 20th Annual Conference – AC2012.

The last two conferences have focused our attention on biodiversity and conservation. The theme for AC2012 brings us back home to the basics of botany and focuses on the identification of plants and their occurrence in nature. The better we can identify native plants, the better we can be advocates for them. This year's conference co-chairs, **Jeff Pitts** and **Mike Homoya**, promise a terrific line-up of speakers and topics. **Rob Naczi**, one of the leading botanists/taxonomists in the world is the morning keynote and the afternoon keynote is **James Locklear**, from Nebraska's Lauritzen Gardens.

Speakers

Dr. Rob Naczi

Arthur J. Cronquist Curator of North American Botany, the New York Botanical Garden
Co-editor, *Sedges: Uses, Diversity and Systematics of the Cyperaceae* (Missouri Botanical Garden Press, 2008). Currently revising one of the most commonly used manuals to our North American flora: *Manual of Vascular Plants of the Northeastern United States and Adjacent Canada* (Gleason & Cronquist)
PhD., University of Michigan, Ann Arbor

James Locklear

Director of Conservation at the Lauritzen Gardens in Omaha, Nebraska
Author, *Phlox: A Natural History and Gardener's Guide* (Timber Press, 2011)
M.S., Southern Illinois University, Carbondale

Dr. Paul Rothrock

Professor and Chair, Department of Earth and Environmental Science, Taylor University
Author, *Sedges of Indiana and the Adjacent States, the Non-Carex Species* (Indiana Academy of Science, 2009)
Ph.D., Pennsylvania State University, University Park

Sally Weeks

Instructor, Purdue University
Author, *Shrubs and Woody Vines of Indiana and the Midwest: Identification, Wildlife Values, and Landscaping Use* (Purdue University Press, 2012) and *Native Trees of the*

Midwest: Identification, Wildlife Values, and Landscaping Use (Purdue University Press, 2010). M.S., Purdue University

Kay Yatskievych


Research Associate, Missouri Botanical Garden
Co-author, *Indiana Vascular Plants Catalogue* (due out 2012)
and author, *Field Guide to Indiana Wildflowers* (Indiana University Press, 2000)
B.A., Indiana University, Bloomington

Mike Homoya

Indiana State Botanist/Plant Ecologist, Department of Natural Resources
Author, *Wildflowers and Ferns of Indiana Forests: A Field Guide* (Indiana University Press, 2012) and *Orchids of Indiana* (Indiana Academy of Science, 1993)
M.S., Southern Illinois University, Carbondale

Charles Deam

Sam Carman with the IDNR Division of Forestry performs his autobiographical impersonation of the irascible, opinionated and accomplished hero of natural Indiana, Charles Deam.

Sam is Education Director for IDNR-Division of Forestry. He holds an M.S. in Natural Resources from Ball State University and in 2010 won the President's Award from the Environmental Education Association of Indiana. 

Details AC2012

WHEN: Saturday,
November 3,
2012 7:45 a.m.
- 5 p.m.

WHERE: The
UIndy Hall at
University of
Indianapolis,
Schwitzer Student
Center

COST: INPAWS
members: \$50
(early)/\$60

Non-members -
\$65 (early)/\$75

Students - \$35

2012 Garden Tour & Plant Sale

Hats Off

Garden Tour

The tour was held in April to catch the spring ephemerals. The gardens were wonderful, even though our warm spring launched the bluebells, trillium, wood poppies and other spring ephemerals to being a little more ephemeral than usual.

Huge INPAWS thanks to **Mary Miller** for heading up the tour that brought almost 200 people to see how Indiana native plants can be used creatively and beautifully in gardens.

Special thanks to the homeowners, **Linda Shikany, Ruth Ann Ingraham, Matt Newell, and George and Betsy Wilson** for allowing people to walk the gardens and for answering visitors' questions.



Betsy Wilson guided visitors through her bird and butterfly garden during the April 21 INPAWS Garden Tour.

Thanks to **Amy Perry** for maps, answers, more; to **Ann Foster** for the scavenger hunt; to **Bill Rice** and **Hamilton County Master Gardeners**; to **Wendy Ford** for handling publicity.

And big thanks to all the garden volunteers: **Barbara Hamilton, Anne Jay, Carl Smith, Christy Krieg, Linda Haas, Christine Zemer, Joe Dwenger, Melissa Moran, Ken White, Elaine Whitfield, Joe Whitfield, Michelle Arfman, Steve Duhamell, Darla Duhamell, Jane Hessler, Amy Perry, Jeannine Mattingly, Holly Faust, Cathy Roth, Emily Roark, Kelly Roark, Ann Foster, Gain Mrenca, Jeanne Bubala, Debra Lloyd, Lois Ephlin, Jane Sweet, and Barry Miller.**



Plant Sale

The 2012 INPAWS Native Plant Sale on May 12 was once again a huge success, thanks to the leadership and efforts of **Ross Nelson** and his unofficial but very real assistant (and wife), **Jackie Luzar**. The sale is INPAWS' largest annual fund-raiser, supporting many of our programs and education efforts.

We had a change of venue this year to Park Tudor School on the north side of Indianapolis.

On Friday night the volunteer team was already in the thick of it, hauling plants, checking in donations, identifying and pricing. Plants continued to arrive on Saturday morning. New items this year included Indian cucumber root (*Medeola virginica*), Dutchman's pipe vine, pale-spiked lobelia, and the state endangered Virginia bunchflower. Live auction goodies included a beautiful sassafras, swamp rose, queen of the prairie, viburnums, and an immense pot of prairie dock. Many buyers – first-time attendees, master gardeners and seasoned customers who arrived with itemized lists – expressed positive remarks on this year's selection and location.

On Saturday morning before the sale, **Janet Creamer** of Indy Parks gave a fascinating talk to an audience of more than eighty, on "Native Plants to Attract Birds."

Generous business donors included **Spence Nursery, Cardno JF New, Munchkin Nursery and Gardens, Mark M. Holeman Landscaping, and Native Plants Unlimited.**

Thanks to all donors and volunteers including: **Dan & Sophie Anderson, Robert Aram, Nancy Ayers, Gene Bush, Michael Campbell, Anna Chase, Deb Ellman, Daryn Fair, Wendy Ford, Marilyn Frohberg, Rich Gotzhall, Virginia Harmon, Denice Haines, Nancy Hill, Tom Hohman, Ruth Ann Ingraham, Ellen Jacquart, Judith Lieberman, Sue Nord Peiffer, Dee Anne Peine, Ruth Penner, George Peregrin, Amy Perry, Susan Pratt, Kelly Spiegel, Frank Sherer, Dawn Stelts, Mike Stelts, Deb and Jim Snyder, Steve Trippel, Kevin Tunesvick, Susan Zellers, and many more!**



Chapter News

Welcome New North Chapter

From small beginnings two years ago, a core of volunteers built enough interest to form a new INPAWS chapter. The new chapter, based in St. Joseph and Elkhart Counties, includes counties across northern Indiana.

On March 25 approximately 25 INPAWS members met at the Elkhart Environmental Center, adopted bylaws for the proposed chapter, and elected officers including Steve Sass, president. The group immediately started making plans for an active first year.



Left: Newly elected officers and friends of the newly formed North Chapter are from left, Scott Namestnik, Sue Stuckman, Lindsay Grossmann, Sarah Sass (front), John Smith, Kristi Bly, Steve Sass, Deb Marr, Abigail Lima.



Standing at Holliday Park with 29 trash bags of garlic mustard are (L-R) Sharon Horvath, Michelle Clayton, Jackie Luzar, Ross Nelson, Rita Hupp, John Montgomery, and Tom Hohman. Also helping were Don Miller, who took the photo, and Betsy Ingle.

South Central Chapter

President **Steve Dunbar** reports that many INPAWS fliers were put into the hands of visitors to the Morgan County Master Gardener Spring Festival by **David Mow** and the Falls of the Ohio Earth Day Celebration by **Deb Farrell**.

Southwest Battles Kudzu


On May 19, 109 volunteers with the Southwest Chapter of INPAWS and Mesker Park Zoo & Botanic Garden in Evansville pulled kudzu from around invaded trees in the largest kudzu patch (five acres) in Indiana. SWINPAWS and Mesker Park partnered and sponsored this event for Plant Conservation Day.

They arranged for a sky art photo to be taken with the volunteers standing in the patch forming a circle with a cross marked through it. The photo was entered in a competition with other zoos across the country. After the pull, native trees were planted in Mesker Zoo to commemorate Evansville's bicentennial.

On July 21st **Ron Giles** will share his photos and insights on Indiana Orchids. A gold-level Master Gardener and member of the American Orchid Society, Ron is nationally known for his photography of plants and birds. SWINPAWS is proud to have Ron and his wife Sharon as members, and has invited other groups in the Evansville area interested in birding and native plants to join them for this exciting lecture. 9:30 a.m. at the Oaklyn Branch Library on Oak Hill Rd, Evansville. From **Carol Slow**, SWINPAWS Secretary.

Central Chapter Invasive's Swat Team — SOLD!

The Central Chapter's Invasives Swat Team has for years battled invasives like honeysuckle, garlic mustard, purple wintercreeper, and English ivy in parks and nature preserves in the Indianapolis area. For the first time they offered their services to a high bidding private landowner at the INPAWS auction. Their offer of 18 man-hours raised \$200.

To join the fun, contact Tom Hohman at pastpres@inpaws.org 

@inpaws.org

Officers

President	president@inpaws.org
Art Hopkins	812-372-2862
Past President	pastpres@inpaws.org
Tom Hohman	317-831-1715
Vice President	vicepres@inpaws.org
Melissa Moran	317-295-2021
Recording Secretary	recsecty@inpaws.org
Chris Carlson	317-257-5413
Corresponding Sec	corsecty@inpaws.org
Fiona Becker	317-373-3631
Treasurer	treasurer@inpaws.org
Marilyn Frohberg	317-254-1660

Nancy Hill	317-283-8345
Kit Newkirk	765-719-0414
Membership	membership@inpaws.org
Open	
Native Plant Rescue	rescue@inpaws.org
Open	
Plant Sale Auction	plantsale@inpaws.org
Ross Nelson	

Chapter Leaders

North	northeast@inpaws.org
Steve Sass	574-287-8939
Central	central@inpaws.org
Amy Smith	317-690-4507
South Central	southcentral@inpaws.org
Steve Dunbar	812-325-0968 West Central
westcentral@inpaws.org	
Reni Winter	765-714-4288
Southwest	southwest@inpaws.org
Davie Sue Wallace	812-963-3930

Committee Chairs

Annual Conference	conference@inpaws.org
Jeff Pitts	317-363-1643
Conservation	conservation@inpaws.org
David & Jane Savage	317-873-5083
Garden Tour	gardentour@inpaws.org
Mary Miller	317-844-6682
Grants & Awards	smallgrants@inpaws.org
Jackie Luzar	
Hikes & Field Trips	hikes@inpaws.org
Mike Homoya	
Historian	historian@inpaws.org
Ruth Ann Ingraham	317-253-3863
Hoosier Outdoor Exp.	hoosier@inpaws.org
Amy Smith	574-229-8782
Invasive Plant Edu.	invasives@inpaws.org
Ellen Jacquart	317-951-8818
Journal Editors	journal@inpaws.org

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INPAWS JOURNAL is published quarterly for members of the Indiana Native Plant and Wildflower Society. Material may be reprinted with the permission of the editor.

All are invited to submit articles, news, and event postings. Acceptance for publication is at the discretion of the editor. INPAWS welcomes differing points of view.

Please submit text and photos (300 ppi) via e-mail to journal@inpaws.org or via land mail to INPAWS JOURNAL, 5304 Carrollton Avenue, Indianapolis IN 46220. Submission deadlines for specific issues are:

Spring – February 23 for April 1 mailing
Summer – May 23 for July 1 mailing
Autumn – August 23 for October 1 mailing
Winter – November 23 for January 1 mailing

Mission

To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the value, beauty, diversity, and environmental importance of indigenous vegetation.

Membership

INPAWS is a not-for-profit 501(c)(3) organization open to the public at www.inpaws.org.

Share Online

Please direct information of interest to webmaster@inpaws.org.

Public Outreach	public@inpaws.org
Karen LaMere	317-752-5444 Website
Website	webmaster@inpaws.org
Wendy Ford	317-334-1932
Youth Outreach	youth@inpaws.org
Cheryl Shearer	317-747-7417

butterflymomok gardenweb.com



Almost two inches long after feeding on leaves of tulip poplar, this caterpillar will soon begin to morph into an Eastern tiger swallowtail butterfly.

A Natural Pairing

Larvae Depend on Natives

Many of us love to see birds and butterflies in our gardens, but act as if insects are from the dark side. They're the creepy crawlies that bite, jump, and chew beautiful green leaves to a ragged mess. Gardeners are offered hundreds



Our tulip poplar tree (*Liriodendron tulipifera*), a member of the magnolia family, is a host plant for the Eastern tiger swallowtail

of products to spray, dust, and feed their plants to deter or kill these “pests”. But 96% of birds rely on insects to feed their young. No insects, no birds. And no native plants, no insects. Insects must live in proximity to specific plants – plants whose chemicals they can digest. These are native plants and they are the foundation of an intricate food chain and the diverse ecosystem we enjoy.

Native plants are also vital to the beautiful

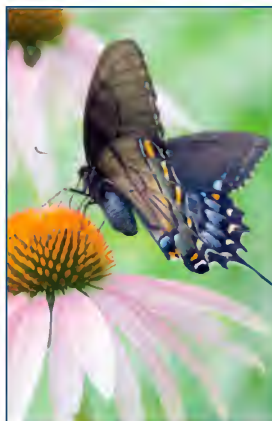
variety of butterflies in our woods, fields, and gardens. Even though adult butterflies can take nectar from many different blossoms (including non-native flowers) their caterpillars are chemically equipped to eat only very specific native plants (sometimes only one). Without these larval host plants, there would be no caterpillars and therefore no butterflies.

One natural pairing is the tulip poplar and

Host Plants



All © 2012 Lynne Tweedie



tiger swallowtail butterfly. After mating, the female adult butterfly lays her eggs on the tree's leaves. When a caterpillar hatches, it is literally sitting on its food. It will curl the leaf edges together with silk and be able to feed while hidden. With this nourishment, it continues its growth through chrysalis to adult

butterfly. The swallowtail caterpillars do not damage the trees. In fact, the butterflies help pollinate the tulip poplar's blooms. A win-win of nature. 🌱

Above: female Eastern tiger swallowtail.

Left: dark form of the female Eastern tiger swallowtail mimicking Indiana's pipevine swallowtail, considered distasteful by many predators.

Walk the Shore

Hikes



Grants & Awards

Noel B. Pavlovic of the U.S. Geological Survey will lead a hike at the Miller Woods Unit of the Indiana Dunes National Lakeshore on Saturday, July 21 from 10 a.m. to 1 p.m. Central Daylight time.

We will walk forward in geological time across dune ridges towards Lake Michigan. On the way we will have views of idyllic interdunal ponds and mesic black oak groves, savanna, and woodland. We may see the beginning blooms of *Liatris*, asters, and goldenrods, and we might catch a glimpse of the federally threatened Pitcher's thistle (*Cirsium pitcheri*).

The two-mile trail is mostly level except for a few sandy dune climbs and one crossing on logs (walking stick provided). Mosquitoes and other annoying insects may be prevalent and poison ivy is occasional.

Questions? Contact **Noel Pavlovic** by email (npavlovic@usgs.gov or phone (219) 921-4743 by 20 July 2012. No RSVP required. We will hike rain or shine unless there are severe thunderstorms.

INPAWS Funds at work across IN

Jackie Luzar and her Grants and Awards committee awarded more than \$5000 to projects to "conserve, utilize, study, and/or educate" about native plants. Information on 2013 grants is available at inpaws.org. 2012 small grants went to:

Allen County – Contribute native plants to an existing garden space at Indian Village Elementary School in Fort Wayne and build connections between the natural world and the school's high-achieving but economically challenged students.

Daviess County – Add native plants to Meredith Plaza, a public space in downtown Washington and educate visitors with signage, educational materials and events.

Dubois County – Create a prairie plant community at Jeffers Nature Preserve at Huntingburg by replacing 1.5 acres of turf with native tallgrass prairie plants.

Gibson County – Help establish a demonstration pollinator garden at Patoka River National Wildlife Refuge, emphasizing plants that host a variety of native pollinators.

Hamilton County – Increase diversity and develop a native plant base for the restoration of

natural habitat within Cool Creek Park and establish a seed bank of native wildflowers adapted to the park's habitat to be used to fill areas where Japanese honeysuckle has been removed.

Jackson County – Establish native plantings for aesthetic and educational purposes at Borchers' Chapel in Seymour, the site of an historic church, nearly a century and a half old, and a new church facility.

Johnson County – Establish a three-acre

July 21 — Indiana Dunes

Noel Pavlovic leads through coastal dune and wetland flora.

August 11 — West-Central

Sally Weeks focuses on wild shrub ID

September (TBA) — Shades

Andrew Methven on fungi

October 6 — West-Central

Bill McKnight on Mosses and Liverworts

Look for more hike information on inpaws.org, the INPAWS blog, in our monthly email updates and postcards mailed to members.

native forest in Grizzly Park at Franklin College as part of a campus and community effort.

Marion County – Help establish a prairie and rain garden as part of a project to build a multi-purpose Community Classroom with plantings and interpretive path for the University of Indianapolis and the University Heights neighborhood.

Help eradicate invasive species and replace them with native plants in the Native Plant Discovery Program at Jameson Camp to create sustainable forest for native plants and animals, as well as hundreds of visitors and campers.

Transform a retention pond into a natural habitat at Castleton United Methodist Church. The project was inspired by a class on Rain Gardens and Natural Habitats by the Marion County Master Gardeners Association and SustainIndy.

Children Outdoors

“Follow a trail and discover native plants, wildlife and history”

This is just one of 11 outdoor and nature activities suggested in the Children's Outdoor Bill of Rights, developed by the Indiana Department of Natural Resources. In May 2011, INPAWS allied with DNR by endorsing the Bill of Rights. Thirty five organizations have now signed on to the concept, encouraging Indiana's kids to spend more time out-of-doors.


After completing every activity on the list, a child can download a Hoosier Outdoor Child

certificate. The activity checklist is available at childrenplayoutdoors.dnr.IN.gov. The website also links to online resources, including DNR's "Discovering a Sense of Place" booklet. Also check out childrenandnature.org, a national movement that helps families and institutions connect kids with nature.

Please share your passion and respect for the natural world with the young people in your lives.

INPAWS' Letha's Fund gives funds to allow schoolchildren to go on outdoor fieldtrips. So far in 2012, we have given grants to:

Guion Creek Elementary - first grade (**Marion**); Holland Elementary - fourth grade (**Elkhart**); United Urban Network - many ages (**Lake**); Kitley Elementary - second grade (**Marion**); Eastern Hancock - second grade (**Hancock**); Union City - sixth grade (**Randolph**); IPS #27 - second grade (**Marion**); and Kitley Elementary - sixth grade (**Marion**).

Letha's Fund accepts applications throughout the year. Information and guidelines can be found at inpaws.org 



When the North Chapter was officially recognized, the INPAWS Northeast Chapter, which had been dormant for some time, was officially disbanded. Members from the Ft. Wayne area were included in the new North Chapter, while those from the Muncie area were assigned to the Central Chapter.

Children's Outdoor Bill of Rights

1. Explore and play outdoors in a safe place.
2. Follow a trail and discover native plants, wildlife and history.
3. Experience traditional outdoor activities like fishing or hunting.
4. Discover and celebrate Indiana's past.
5. Camp under the stars.
6. Climb a tree.
7. Visit a farm.
8. Plant a seed or tree and watch it grow.
9. Splash and play in streams, lakes and ponds.
10. Enjoy the outdoors using all the senses.
11. Ask questions, find answers and share nature with a friend.

From Our President

Art Hopkins


I am continually impressed with how many people work together so well, and with so much talent, to advance INPAWS' mission: *To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the value, beauty, diversity and environmental importance of indigenous vegetation.*

Already this spring, we offered a Garden Tour featuring native plants in spring bloom. We held our annual Plant Sale, one of my favorite INPAWS activities, a cheerful hubbub of a morning, and a great

chance to learn about native plants and pick up some bargains.

INPAWS Chapters around the state remain active. Our fairly new Southwest Chapter, capably led by **Davie Sue Wallace**, has planned a really impressive year of educational, recreational/social, fund-raising, and service projects in their region.

With great pleasure, I announce our brand-new North Chapter, centered in St. Joseph and Elkhart Counties. President **Steve Sass** reports they are preparing an interesting array of activities.

Wherever you live in Indiana, I urge you to look up your local Chapter and get involved, or volunteer at the state-wide level. We can use your help, and I promise you, you'll rub shoulders with some very impressive and capable people! 

The Field Guide to Fields:

Hidden Treasures of Meadows, Prairies, and Pastures by Bill Laws

Review by Nancy Hill

Books

I picked this book up because of its name (you gotta love it) and its cover – a beautiful woodcut-style wash of green and purple field rows with distant trees and sky. As I leafed through, I discovered dozens more gorgeous illustrations. I saw that this lovely volume discusses fields over thousands of years and across the entire world. “From the rice paddies of Asia to the buttercup-filled meadows of Europe, and from the lush green paddocks of New Zealand to the wide-open plains of the American Midwest, the field is the face of the countryside,” Laws

writes in his introduction.

This visually delightful book is an enjoyable read, taking us from the first fields – the early domestication of plants and animals, through centuries of man’s use of the land for food, enterprise and beauty. He devotes individual pages to corn, coffee, wild rose, and heather, among others. He discusses livestock and wilderness, Darwin and tractors, what grows in fields and what mankind has made to grow in fields. It is an ambitious treatment that always respects the environment. “In the last 2,000 years most of the natural vegetation has been replaced by the managed vegetation of the fields. Too often it has

been mismanaged.”

Laws essentially talks about plants. The crops that feed the world, like soya beans, barley, and wheat, and also the native plants that are the foundation of it all: “...gritty little blackberry seeds have been found in the remains of Neolithic discoveries.”

The Field Guide to Fields is published by the National Geographic Society, 2010.

“From the rice paddies of Asia to...the wide-open plains of the American Midwest, the field is the face of the countryside.”

Journal Submissions

If you would like to write an article for the INPAWS Journal, contact Nancy Hill at journal@inpaws.org. Don’t consider yourself a writer? Tell us about an idea, hobby, interesting tidbit, even just a fun slant on a topic of interest, and we’ll do our editor-best to shape something publication-worthy. 🌱

Get Involved

People who are active in INPAWS learn a great deal about the natural world, practice talents, develop skills, meet interesting people, and make friends. You are invited to participate.

Some very important work takes place “behind the scenes.” We currently need help with tasks related to **membership** including publishing the yearly directory, thanking and recognizing donors, and providing lists for the Journal and other mailings.

INPAWS also needs people to join a committee to help plan the 2013 **Plant Sale**. Ross Nelson has been doing a great job for the last couple of sales, but would love to have more INPAWS members learn the ropes and share the work.

To get involved with these or any INPAWS activities, use the contact information on page 10 to get in touch with the team leader. 🌱

© Quid Publishing



“On the margin of the field” is one of many beautiful illustrations from *The Field Guide to Fields* by Bill Laws.

A Book to Cherish

Shrubs and Woody Vines of Indiana and the Midwest by Sally & Harmon Weeks

Review by Barbara Plampin

Endorsed by Mike Homoya as a “treasure trove of information,” this is a nearly perfect guide to, as the book is subtitled, the “identification, wildlife values, and landscaping use” of our native and non-native shrubs and woody vines.

The Weekses, faculty members at Purdue, one retired and one still teaching, define a shrub as “a woody plant with multiple stems from a common base that grows no taller than 20 feet or so.” They furnish an enormous amount of information, and have gone to extraordinary lengths to obtain it. Over 20 years, they have raised many of the shrubs discussed to provide information from a wildlife rather than a horticultural viewpoint. Treatment includes discussion of nesting and protective cover for birds and animals. When Sally found willows perplexing, she convened a two day conference and got Dr. George Argus, internationally noted salicologist, to lead it. (He reviewed the Weeks’s text on willows.)

This book makes identification as easy as it gets. The authors combine original keys and easy-to-use classifications in the table of contents with abundant gorgeous color photographs. Whether climbing a cliff in Tennessee to photograph big-leaf snowbell (*Styrax grandifolius*) or walking the north shore of Lake Michigan for heart-leaved willow (*Salix cordata*), Sally took all the pictures.

The back cover explains how the book works: “Scientific (Latin) and common names are given for each species as well as Similar Species Distinctions boxes that give easy-to-find comparisons and important keys to aid in identification. Information on size, form, and habitat of each species is complimented by practical synopses of both wildlife uses and landscaping value....”

“Each species has multiple color photographs illustrating important features such as leaves, leaf scars, buds, flowers, fruit and bark and are supported by written descriptions of

these features.” They include pictures of specimen plants, even pith (the inside stem tissue that stores and transports nutrients). Now I know why cross-vine (*Bignonia capreolata*) is so named. Its pith is cross-shaped.

“Range maps have been provided as a general guide to the distribution of the many species described.” You can even find out whether the woody in question is known from your own county. Some entries include propagation tips. I learned why the Indiana Dunes National Lakeshore’s attempt to restore a patch of state threatened, lemon-flowered false heather (*Hudsonia tomentosa*) failed. Instead of transplanting shrubs, we should have taken cuttings and rooted them as recommended here.

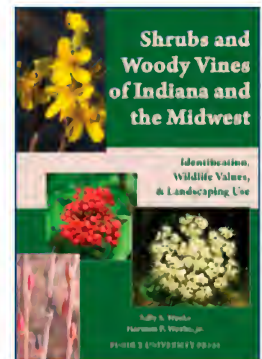
Sections devoted to whole genera mean I’m finally going to learn all the grapes, dogwoods, and viburnums. I’ve already learned to recognize a non-flowering black raspberry: it’s the only *Rubus* whose new canes are bright red (after rubbing off the glaucous bloom).

Because *Shrubs* is only one volume, it can’t discuss everything, e.g., all the willows, but we’re told what’s missing and where to find more information. Fortunately, the Weekses have been proven wrong when they state that fly honeysuckle (*Lonicera canadensis*) is Indiana state extirpated. Sally recently saw the shrub, found by **Scott Namestnik**, in damp woods also inhabited by jumping mice (*Zapus hudsonius*).

A useful list of Midwest native plant nurseries is provided in the back, as is a list of non-natives. Some readers might have liked essays on these as well.

Forgo a few lunches out and buy the book. Where else appear such descriptions as “an inflated pair of shorts” for a partridge berry (*Mitchella repens*) and “round Band-Aids” for fruits of wafer ash (*Ptelea trifoliata*), or an anecdote about a younger brother, who, when sent to find willow flowers saw only shrubs bearing “large, caterpillar-like things”?

Shrubs and Woody Vines of Indiana and the Midwest is published by Purdue University Press, 2012.



“This book makes identification as easy as it gets” according to reviewer Barbara Plampin.



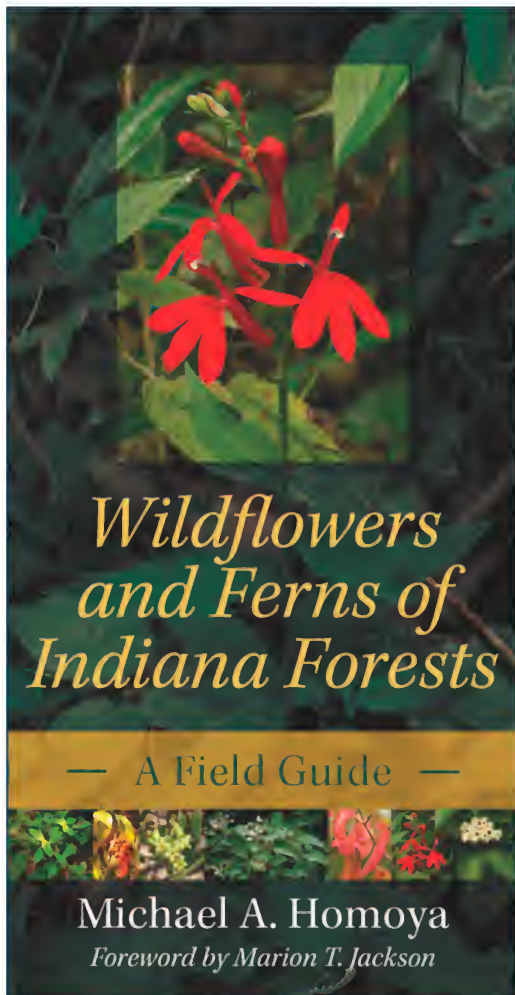
Barbara Plampin is a Life Director of the Shirley Heinze Land Trust and a field botanist. She monitors rare plants, often for the Indiana Department of Natural Resources. She holds a Ph.D. in English and lives in the Indiana Dunes.



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***Wildflowers and Ferns of Indiana Forests:
A Field Guide* by Mike Homoya**

Review by Nancy Hill

It's here! Mike Homoya's much anticipated book on the wildflowers and ferns (and trees, shrubs, grasses and sedges) of Indiana's woodland. Mike previewed his book in the Winter 2010-11 issue of the Journal, which can be found online at inpaws.org.

My new copy is already slightly dirty, with many pages turned down, as sure a sign of excellence as a dinner plate licked clean. The photos are superb and make identification easy. The organization, by color and bloom time also helps. This

"This essential field guide is just like Mike – packed with information yet down to earth."

essential field guide is just like Mike – packed with information yet down to earth. You can use it to quickly identify one of nearly 300 species, or you can enjoy a leisurely read and learn about Indiana's natural regions or its major forest types, like wet floodplain, dry upland, mesic flatwoods, etc., and what plants grow in each.

"I strove to make the guide as user-friendly as possible," Mike said, and he succeeds. But if you want, you can use this guide as a mini-classroom. He gives us detail on every plant, including terms and diagrams that are perfect "for those aiming for botanical literacy."

Kudos to Mike Homoya for giving us another volume that demands a space on the bookshelf of every native plant enthusiast.

Wildflowers and Ferns of Indiana Forests is published by Indiana University Press, 2012, with a forward by Marion T. Jackson. It is part of Indiana Natural Science, edited by Gillian Harris.



inpaws journal

Indiana Native Plant and Wildflower Society

Fall 2012

Spider Lily

A Late Summer Fascination

By Gene Bush

Plant Profile

At the risk of getting up on my 'natives soapbox' once too often, I find myself stepping up again for our own spider lily (*Hymenocallis occidentalis*). I see the tender foreign species in Dutch bulb catalogs, but never see our native listed. Here in the U.S. I have yet to see *H.*

where they receive only late afternoon sun. They also do not demand a pond or stream edge to do well. I dug in lots of peat and leaf mold, keeping my plants well mulched with chopped leaves, and they ride out our late summer droughts just fine.

This member of the amaryllis family has long strap-like leaves that form a fountain radiating up and then arching out and down. Individual leaves are about two and one-half inches wide by over two feet in length with a center rib forming a crease down the middle. Normally the foliage has mostly gone dormant by bloom time, but some years both foliage and blooms are present at the same time.

The ghostly blooms are at the top of a nude stalk that reaches thirty inches or more. Each bloom has its own display stand at the top of the stalk and there will usually be five to six blooms per stalk. The common name of spider lily comes from how the blooms are constructed. Each bloom has six long, narrow, white petals widely spaced and in a shallow cup outline. At the center of the petals is a cup formed from "webbing" that goes from stamen to stamen.



© Gene Bush

The striking blooms of our native spider lily appear in late summer atop 30 inch stalks. According to Gene Bush, Spider lily is no more difficult to grow than tender Dutch bulbs found in catalogs.

occidentalis listed in a wholesale catalog, and only rarely have I seen it listed in a garden catalog. I do not have a clue as to the why of it all. To the best of my knowledge *occidentalis* is no more difficult to propagate and grow on than the tender species.

In the wild, spider lily is usually found growing along creek and branch banks where it is flooded during the growing season, as well as swampy bog and marsh areas. Usually they are in full sun. Native range is from Georgia, Alabama, on over and up to Indiana and Illinois. In spite of this range, hardiness is usually rated at USDA Zone 7 in literature. In my garden here in southern Indiana they have been through -30 degrees on one occasion and -20 on more than one occasion. They will also take some shade and do quite well, as mine are transplanted

Inside:

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There are six stamens about three inches long and the web comes about two inches up each one, forming a rib for the web. The overall

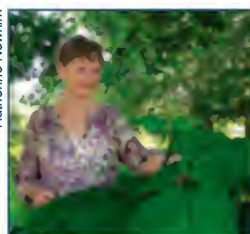
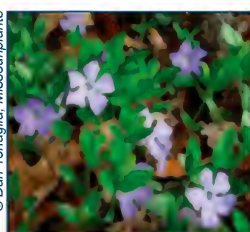
Spider – continued on page 9

Movie Horrors

Letters

© Dan Teraglia MissouriPlants

Katherine Newkirk



Vinca minor (top) is on the INPAWS list of What NOT to Plant.

Ruth Ann Ingraham with American spikenard (Aralia racemosa) that thrives near a limestone wall at her Indianapolis home, although it did not self-seed as we erroneously reported in July.

A Native Plant Enthusiast Sees The Hunger Games

By Melissa Moran

This spring, my husband, our two teenaged daughters and some friends headed to the theatre for the blockbuster opening of The Hunger Games. In a future place and time, a boy and girl from each of twelve districts are selected to fight to the death on live television. The protagonist (Katniss) volunteers to take her younger sister's place for the latest match. Parts of the movie were filmed in North Carolina's DuPont State Forest and thousands of wilderness acres—including waterfalls, streams, and lakes—provide a beautiful backdrop to the tragic story. Halfway into the movie, Katniss is heartbroken; she has lost a friend and ally to the Hunger Games and sets

about to collect flowers for an impromptu memorial tribute to her friend.

In the throes of this compelling and tearful scene, it happens. My eyes fix on the deep green forest floor on which our protagonist has placed the body of her friend. I recognize it. *Vinca minor*. Everywhere. Unmistakable green monotony. Wall-to-wall un-natural carpet, as far as the eye can see.

My mind begins to wander in several directions: How does this happen to such beautiful places? Don't they have an invasive plant removal SWAT team? I'll bet the director selected this glade precisely for the deep green, complete covering of the forest floor. Did anyone in the cast or crew recognize this as an invasive plant? If they had each taken two fistfuls, they could have cleared it all. Don't they know periwinkle is on the Invasive Plant Species Assessment Working Group (IPSAWG) list and the INPAWS list of What NOT to Plant? Perhaps Ellen Jacquart could request publishing rights and use a scene from this movie in the next IPSAWG brochure...

Clarifications

In the summer 2012 issue we ran a caption that identified bladder campion as an Indiana native. Kay Yatskievych clarifies, "Bladder campion (*Silene vulgaris*) is not native in Indiana. It is an exotic that is native to Europe, Asia, and Africa, and has been introduced nearly throughout the U.S."

Ruth Ann Ingraham wrote to clarify another photo caption: "The *Aralia racemosa* or American spikenard," she says, "which I'm standing behind in the photo did not self-seed in the normal sense from a natural habitat but rather from a cluster of plants introduced into my landscape in 1997. I attempted to make the point that apparently a bird plucked a seed from my introduced plants and deposited it next to the limestone wall by my front sidewalk. The seed germinated, rooted and a plant grew. That plant thrives there and is far more robust than the plants from which it originated. I believe, rightly or wrongly, that the limestone leaches nutrients which this volunteer plant prefers. It would be misleading to think that *Aralia racemosa* would self-seed naturally into my northside Indianapolis garden."

"I recognize it. Vinca minor. Everywhere. Unmistakable green monotony. Wall-to-wall un-natural carpet, as far as the eye can see."

What can I say? Once you see an invasive plant and know it for what it is, you will always see it, no matter where you are or what you're doing. I leaned over to my native plant-loving daughter and told her what I saw. "I know, I saw it too, Mom. But let's watch the rest of the movie."

Next invasives removal project: DuPont State Forest, North Carolina—anyone? 🌱

Melissa Moran lives with her family in the Nora area north of Indianapolis. Her first native plant garden was made entirely of plants from the INPAWS plant sale, and she has continued expanding her home's native gardens ever since.

Meet the Dodders

A family with unsavory behaviors

By Mike Homoya

Fact may indeed be stranger than fiction, and in nature, dodder is a prime example. Although dodders are true plants, they look nothing like them. Think instead of strings of orange or yellow spaghetti. Fully fledged dodders have no roots, no apparent leaves, and just miniscule amounts of chlorophyll. And the flowers, when produced, are barely there. Given these characteristics, and some unsavory behaviors to be revealed later, it's clear that dodders are no ordinary plants.

Yet, life begins ordinarily enough for a dodder. Its tiny seedling looks somewhat normal – like a sprouting onion – but further in its growth, normal ends and bizarre begins. Dodders are vines, and as a tiny dodder seedling develops, it “sniffs” out nearby plants upon which to climb (yes, dodders can detect

“Fully fledged dodders have no roots, no apparent leaves, and miniscule amounts of chlorophyll.”

odorous vapors). After contact with a plant, the dodder breaks its connection with the ground, giving it unfettered access to scramble about the branches of its reluctant host.

And now for the unseemly part. At various points of contact between the dodder and its host plant, the dodder produces root-like haustoria that pierce the host's stem,

Michael Homoya is a plant ecologist and botanist for the Indiana Division of Nature Preserves, a position he has held since 1982. Regarded as one of the finest field botanists of the Midwest, he is author of Wildflowers and Ferns of Indiana Forests: A Field Guide (Indiana University Press, 2012) and Orchids of Indiana (Indiana University Press, 1993).

slowly draining it of its life juices. Yes, it's true. Dodders are sap-sucking parasites, the leeches of the plant world.

Although dodders feast mostly on juicy herbaceous plants, shrubs such as buttonbush, hazelnut, and even poison ivy vines are also fair game. Dodders are not totally promiscuous, though. They have a strong dislike of grasses, sedges, lilies, and other monocot plants. Just



Mike Homoya

must not be tasty enough.

Dodders (*Cuscuta*), of which Indiana has ten native species, are members of the morning glory family (*Convolvulaceae*). Not many of the species are common, and some are considered state endangered (state endangered means 5 or fewer extant occurrences statewide). Probably the most common dodder in the state is swamp dodder (*Cuscuta gronovii*), but the most interesting may be rope dodder (*Cuscuta glomerata*). When in bloom, its cluster of tightly compact flowers form a thick, coiled “rope” around the stem of the host plant, making it one of the easiest dodder species to identify. For identification of the others, close examination of the flowers and fruits is necessary.

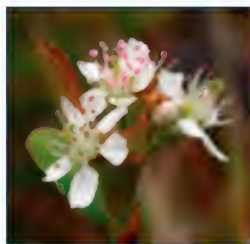
Dodders are typically found in wetlands growing on a variety of host plants, particularly spotted touch-me-not (*Impatiens capensis*) and water willow (*Justicia americana*), the latter an

Dodders—continued on page 5

**Plant
Profile**

What's On Your Mind?

Native Plant Q&A



Three species recommended to restore the understory for a woodland garden are red chokeberry (top), spicebush and buttonbush (right).

Wild Ideas

by Patricia Happel Cornwell

Q I have been clearing honeysuckle, prairie rose and garlic mustard in my woods to create a woodland garden. The cleared area is mainly bare ground and poison ivy, 80% shady year-round and dry, dry, dry. I have planted two arrowwood viburnums and two spicebushes along the edge of the woods. What could I plant in the woods to help restore the understory?

— Heidi Jasper, Bartholomew County

A You already have one of the best understory species for a shady garden: native spicebush (*Lindera benzoin*). Spicebush grows 6 to 15 feet tall in sun or shade and all parts of the plant have a pleasant spicy scent. In spring it is covered with yellow blooms; in fall it sports red berries and bright yellow leaves. Color and fragrance – that's the good news. The bad news is that, like most native shrubs, it prefers moist soil, which you do not have.

Another attractive possibility for full sun or partial shade native to the northeast US is red chokeberry (*Aronia arbutifolia*), which reaches 10 feet tall, with clusters of red berries and showy red autumn color. It likes acidic soil and tolerates both wet and dry.

Buttonbush (*Cephalanthus occidentalis*) would be a stretch but it, too, tolerates a wide range of soil and moisture conditions once established. This species has sweet-smelling fuzzy white balls of flowers and glossy leaves. It grows six to 10 feet tall.

You say that in addition to multiflora rose, Japanese honeysuckle and other invasives, you have removed a lot of "prairie rose gone amok." *Rosa suffulta*, or prairie rose, is our only native climbing rose, producing two-inch pink blooms in June. It accepts ho-hum soil and, if you do indeed have this species, you know it already thrives in your dry woods. It is possible that you actually have Virginia rose (*R. virginiana*) or pasture rose (*R. carolina*), as these also tolerate dry, poor soil. If you have not exterminated all of your wild roses,

a judiciously pruned clump would lend some early summer color to your woodland garden.

You noted the presence in your woods of flowering dogwood. Depending on the species, these can be understory or canopy trees, some growing to a height of 35 feet, like native pagoda dogwood (*Cornus alternifolia*). Natives of more modest size are red osier dogwood (*C. sericea*) and gray dogwood (*C. racemosa*), which grow only four to eight feet tall.

All of these species can be pruned to fit your space. If you are willing to water them generously at least during their first year, you may be well rewarded. Native shrubs are not always stocked by garden centers, but check out the Landscaping section at inpaws.org for native plant retail sources. Carolyn Harstad also lists native plant sources at the back of her book *Go Native: Gardening with Native Plants and Wildflowers in the Lower Midwest*, IU Press, 1999.



naturalandscape/nursery

Q I am having trouble identifying a species I saw last May at Stoutsburg Savanna in Jasper County. There were three plants 1–2 feet high, with cream-colored, oddly shaped flowers on branches that paralleled the ground. The flower is hard to describe: the two top petals were flat, the next two beneath were at a 45-degree angle and the bottom two formed a pod at a 90-degree angle. The leaf

Wild Ideas—continued on page 5

Dodders from page 3

herb that grows about 1 to 2 feet tall in shallow streambeds and lakeshores. But there are many different hosts, including the mallow seen here in the photo. Even though mostly found in wetlands, dodders can turn up in some surprising places. During this past summer season a population of dodders was observed terrorizing some nice garden annuals (especially Coleus)



Mike Homoya

Dodder vines find many different hosts, including this mallow (Hibiscus) observed at the Muscatatuck Bottoms Recreation Area.

growing along the Indianapolis Canal Walk.

In Indiana, dodder rarely infects agricultural crops, although elsewhere in the U.S. some may be troublesome pests. But unless the dodder infestation is severe, the negative impacts seem to be tolerated. Most host plants continue to grow and even flower and fruit, albeit somewhat less vigorously than normal. Thus, there's usually little need to be concerned that dodders will kill your favorite plants. And anyway, dodders are pretty

cool plants that need some love too.

A note of warning. While research has shown that dodders are parasites of plants only, it would still be wise not to stand too close to them. Who knows, the desired object of a particularly hungry one of these botanical "wiretappers" just might be you! 🌱

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Wild Ideas from page 4

is a five-leaflet compound. On the sample I took, three leaflets are 1½ to 2 inches long, the bottom two smaller. I think this plant is in the pea family, perhaps a kind of indigo.

— Ed Zschiedrich, Battle Ground, Indiana

A You are on the right track; this plant is certainly in the pea family. *The Audubon Society Field Guide to North American Wildflowers (Eastern Region)* describes the typical pea flower as having "a broad upper petal (banner or standard), two lateral petals (wings), and two bottom petals (keel) joined and shaped like the prow of a boat."

I believe you have seen large-bracted wild indigo (*Baptisia leucophaea*). This indigo has white or cream flowers and "two large stipules at the base of three-part leaves, giving the effect of five leaflets rather than three" (Audubon). This species can be differentiated from white wild indigo (*B. leucantha*) by the leaves; *B. leucantha* has three-part leaves with no noticeable stipules. 🌱

*Editor's note: INPAWS had many plants of both *B. leucophaea* (cream false indigo) and *B. leucantha* (white wild indigo) for sale at its native plant sale in May, 2012.*

If you have a question for the "Wild Ideas" column, e-mail the details with your name, city or county, and phone number to Pat at flowerfeet@hughes.net. Be sure to type "INPAWS Wild Ideas" in the subject line.



© K.R. Robertson

The large-bracted wild indigo blooms in May or June and then goes dormant. The stem detaches from the base and the plant tumbles in the wind, dispersing its seeds.

Finally, a use for poison ivy

Hikes

Dunes Walk

By Katharine Hadow Ploense

Complain about poison ivy if you like, but at the Indiana Dunes National Lakeshore it protects the pitcher's thistle.

When my family arrived at the INPAWS' "Walk Through Time" hike at the Indiana Dunes on July 21, we expected well-groomed trails. Instead, our guide and lecturer, ecologist Noel Pavlovic of the U.S. Geological Survey, Biological Resources Division, led us off the official trails onto footpaths menacing with thick poison ivy.

Noel Pavlovic of the U.S. Geological Survey, Biological Resources Division, led us off the official trails onto footpaths menacing with thick poison ivy.



© Katharine Hadow Ploense 2012

When we came to a rickety log bridge, we were technically crossing the Grand Calumet, but at that point the river was an unimpressive six feet wide and two feet deep. The dicey crossing still made the hikers nervous—not for fear of slipping into churning waters, but of dropping their cell phones and cameras into the trickle.

Between the bridge and the poison ivy, this uninviting trail discouraged hikers from following it to the top of the dune. If they got there, they might trample the pitcher's thistle (*Cirsium pitcheri*), a federally threatened plant.

Pitcher's thistle is now found on beaches and grassland dunes of Indiana, Illinois, Michigan, Wisconsin, and Ontario, Canada. It requires five to eight years to mature, and then flowers only once. The flowering period typically lasts from June to early July, but because of 2012's hot, dry summer, the one mature flower we saw had already gone to seed and was dying.

Noel stopped often along the trail to point out both native plants and invasive non-natives. He spoke especially fondly of the wild lupine (*Lupinus perennis*). At its northern range, the lupine supports the Karner blue butterfly, an endangered species found chiefly around the Great Lakes. The wild lupine requires sandy soil and only partial shade. We did not see the lovely blue flowers because it blooms in May and early June. The lakeshore's oak savanna does offer a suitable climate, but we didn't see many plants, again because of the drought.

Noel also talked about the Dunes' oak savanna. In the Midwest, oak savannas and tallgrass prairies are the most threatened ecosystems. He told us that ecologists debate the exact definitions of ecoregions, but in all cases, definitions depend on how much tree cover the land receives. In the Midwest, they use this scheme:

- Prairie <20% canopy cover
- Savanna 20–50% cover
- Woodland 50–90% cover
- Forest >90% cover

What we learned on "Walk Through Time" at the Indiana Dunes: Stay on the trails. Otherwise you may develop a rash, or, worse, harm a threatened species. Protect wild lupine if you want to help support the Karner blue butterfly. In defending the pitcher's thistle from humans, finally, poison ivy is good for something. 🌿

Katharine Hadow Ploense is the former director of public information at Reeves-Reed Arboretum in Summit, NJ. She volunteers at the Natural Resources Conservation Service of the USDA. Her herbicidal neighbors would be dumbstruck to learn that she lectures on non-native invasives. She deadheads daylilies at Thistlethorpe in Crown Point, IN.

INPAWS Events

Conference 2012

Saturday, November 3

7:45 am to 5:00 pm

UIndy Hall at University of Indianapolis,
Schwitzer Student Center

INPAWS' biggest annual event

Keynote Speakers

Rob Naczi, Curator of North American Botany at the New York Botanical Garden and one of the world's leading botanists-taxonomists

James Locklear, director of conservation at Omaha's Lauritzen Gardens

Also: Dr. Paul Rothrock, Sally Weeks, Kay Yatskievych, Mike Homoya, and a special visit from Charles Deam (Sam Carman)

Find registration information at inpaws.org

Hike

Saturday, October 6

9:30 to 3:00 EDT

Fern Cliff Preserve
Putnam County, Indiana

Leader: Bill McKnight, former biology instructor and museum curator. Author of *Bryophytes of Illinois and Indiana* (in prep).

What To See: West central Indiana has a good *bryoflora* (mosses, liverworts and hornworts), with Putnam County having almost half of the 450 species reported from Indiana. If time permits we may do an additional site, possibly Sword Moss Gorge.

Go to inpaws.org or the INPAWS blog for more information.

Hunting Mushrooms

On Saturday, September 8, about 30 people ranging in age from 6 to 60-something joined Dr. Andrew Methven of Eastern Illinois University for an INPAWS hike at Shades State Park.

They went in search of mushrooms. Dr. Methven estimates that they found between 75 and 100 species of fungi. "We saw some fungi I would generally consider to be early summer and summer fungi. I think that was a direct effect of having so little rainfall in the summer. The recent rains brought up fungi we didn't see earlier in the year."



INPAWS members found scores of mushrooms during a recent hike at Shades State Park. Two of the species may be new to Indiana according to mycologist Dr. Andrew Methven.

The most exciting find to him as an expert were several species of *Lactarius*, the milky cap mushrooms. "Two of the species may be new to Indiana," he said, "and there were two other species which are not common but represent distributional range extensions."

When asked, what one thing he wished more people understood about fungi, Dr. Methven said, "How important they are ecologically and economically. We (humans) could not exist without fungi. They are important decomposers and nutrient recyclers in the forest. Without them we would have been buried in organic debris long ago." The fungi are also important economically. They give us "penicillin, bread, alcohol, ethanol, lots of pharmaceutical compounds and organic compounds we use in daily life...every day." 🍄

Nancy Hill

@inpaws.org



Officers

President	president@inpaws.org
Art Hopkins	812-372-2862
Past President	pastpres@inpaws.org
Tom Hohman	317-831-1715
Vice President	vicepres@inpaws.org
Melissa Moran	317-295-2021
Recording Secretary	recsecty@inpaws.org
Amy Perry	
Corresponding Sec	corsecty@inpaws.org
Fiona Becker	317-373-3631
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Landscaping Support	
Sue Nord Peiffer	
Membership	membership@inpaws.org
Open	
Native Plant Rescue	rescue@inpaws.org
Open	
Plant Sale Auction	plantsale@inpaws.org
Ross Nelson	
Public Outreach	public@inpaws.org
Karen LaMere	317-752-5444 Website
Website	webmaster@inpaws.org
Wendy Ford	317-334-1932
Youth Outreach	youth@inpaws.org
Cheryl Shearer	317-747-7417

Chapter Leaders

North	northeast@inpaws.org
Steve Sass	574-287-8939
Central	central@inpaws.org
Amy Smith	317-690-4507
South Central	southcentral@inpaws.org
Steve Dunbar	812-325-0968
West Central	westcentral@inpaws.org
Reni Winter	765-714-4288
Southwest	southwest@inpaws.org
Davie Sue Wallace	812-963-3930

Committee Chairs

Annual Conference	conference@inpaws.org
Jeff Pitts	317-363-1643
Conservation	conservation@inpaws.org
David & Jane Savage	317-873-5083
Garden Tour	gardentour@inpaws.org
Ann Foster	
Grants & Awards	smallgrants@inpaws.org
Jackie Luzar	
Hikes & Field Trips	hikes@inpaws.org
Mike Homoya	
Historian	historian@inpaws.org
Ruth Ann Ingraham	317-253-3863
Hoosier Outdoor Exp.	hoosier@inpaws.org
Amy Smith	574-229-8782
Invasive Plant Edu.	invasives@inpaws.org
Ellen Jacquart	317-951-8818
Journal Editors	journal@inpaws.org
Nancy Hill	317-283-8345
Kit Newkirk	765-719-0414

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INPAWS JOURNAL is published quarterly for members of the Indiana Native Plant and Wildflower Society. Material may be reprinted with the permission of the editor.

All are invited to submit articles, news, and event postings. Acceptance for publication is at the discretion of the editor. INPAWS welcomes differing points of view.

Please submit text and photos (300 ppi) via e-mail to journal@inpaws.org or via land mail to INPAWS JOURNAL, 5304 Carrollton Avenue, Indianapolis IN 46220. Submission deadlines for specific issues are:

Spring – February 23 for April 1 mailing
Summer – May 23 for July 1 mailing
Autumn – August 23 for October 1 mailing
Winter – November 23 for January 1 mailing

Mission

To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the value, beauty, diversity, and environmental importance of indigenous vegetation.

Membership

INPAWS is a not-for-profit 501(c)(3) organization open to the public at inpaws.org.

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Please direct Information of interest to webmaster@inpaws.org.

Going for the Gold

Competitive Botanizing

By Barbara Plampin

No botanical Olympics? Botanists do compete anyway, sometimes rather fiercely, because we can get our names in regional, state, or local records, or even books. Hikes and explorations furnish opportunities to “medal.” The unspoken rule: The first person, even if idly bored and ignorant, to ask “What’s this?” gets the gold. The actual identifier may preen herself, but her medal



© 2001 Charles Pierce

will be silver. The knowledgeable do well to call out the plant name or its equivalent very quickly. Example: The Division of Nature Preserves’ Tom Post and I agreed we were looking for state rare ground cedar (*Lycopodium tristachyum*). One day, spotting candidates, I was fumbling in my book for an ID when Tom exclaimed, “Barbara, you’re standing in it!” Gold to Tom.

Bronze goes to those lumped under et al. Sometimes the records list actual names, but being an et al. may spare one embarrassment if the gold medalist’s ID of, say, a rare fern, later turns out to be erroneous.

Exploring new territory, the would-be medalist dashes ahead, capitalizing on the pack’s tendency to stop to ID every single plant. She keeps speculations about possible rare finds to herself. Silence and swift feet enabled me to find two state threatened bladderworts: the dirty yellow flowered small or lesser bladderwort (*Utricularia minor*) and one-half inch plus hair or zig-zag bladderwort (*U. subulata*) in unexplored pannes. (Pannes are intradunal ponds created when wind excavation

exposes the water table.)

Unlike an Olympic race, the person in front may not medal. On a spring bog hike, I heard my co-leader cry out triumphantly those most humiliating words, “You walked right by it!”: it being the emerging missile nosecone of tightly wrapped leaves of the state watch list white lady’s slipper (*Cypripedium candidum*). I was too busy seeking grass-of-parnassus (*Parnassia glauca*) leaves.

Last place may luck out. On a hike through savanna and sand dune I had two before-lunch sightings of state threatened fame flower after all the other botanists had “walked right by it.” The rosy petals of this portulaca family member do not open until three and close at six.

If properly licensed, a loser may console herself by collecting the rarity and depositing it in an herbarium, thus ensuring her name in the records.

Not recommended: imitating a certain British botanist who, greedy for fame, salted a far-flung Scottish island with disjuncts (plants far out of their range) and then “discovered” them over the years to botanists’ applause. Fraud detected, his medals were stripped. 🌱

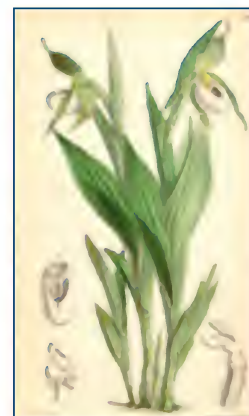
Barbara Plampin is a Life Director of the Shirley Heinze Land Trust and a field botanist. She does rare plant monitoring, often for the Indiana Dunes National Lakeshore. She holds a Ph.D. in English and lives in the Indiana Dunes.

Spider— from page 1

appearance is of a delicate white lace doily waving in the wind.

Blooms come on at a time when gardens could use a bit of color. In my garden spider lily begins blooming in mid-August and lasts well into September. Some native companion plants that bloom at the same period could be cardinal flower (*Lobelia cardinalis*), the great blue lobelia (*L. siphilitica*) and turtle head in pink (*Chelone lyonii*). You may also want to try some of the native asters. 🌱

© Gene Bush. Bush is a nationally known garden writer and speaker who owns Munchkin Nursery & Gardens in southern Indiana. Contact Gene at munchkinnursery.com or join him on Facebook or Pinterest.



Wikimedia Commons



Watson, L., and Dallwitz, M.J. 1992 onwards

While botanizing, Barbara Plampin was intent on finding grass-of-parnassus (left) when she walked right by Lady’s slipper (top).

Another find, the dirty yellow flowered small or lesser bladderwort is threatened in Indiana.

A Conservation Story

Dateline May 23, 2012

by Steve Sass

Last Friday, a day that was literally sandwiched in between Thursday's garlic mustard & dame's rocket pull at the South Bend/Elkhart Audubon Sanctuary and Saturday's garlic mustard & dame's rocket pull at Save the Dunes' Trail Creek Fen property, I had time to shop for some tomato and pepper plants at Vite's Greenhouse in Buchanan, MI. While perusing the vegetables, I spied a table full of none other than dame's rocket (*Hesperis matronalis*). In case you don't know this plant, it's the pink to white plant that flowers in abundance along roadsides in May.

Stunned by the irony of seeing for sale in a local nursery an aggressive, exotic invasive plant that I had just spent six hours pulling, I snapped a picture of the dame's rocket display and posted it on the INPAWS Facebook page. My post was quickly noticed by INPAWS State Invasive Plant Education Chair, Ellen Jacquart, who immediately contacted Vite's Greenhouse and politely asked them to stop selling this invasive plant. Shortly thereafter, Vite's replied: "Thank you for alerting us to this. After additional research, we are going to discontinue selling dame's rocket and remove them from the bench. We purchase this plant from a wholesaler in a part of the country where it is apparently not such a problem. The consolation is that we have only sold just a handful and don't have an abundant supply."

I think that it was a very upstanding move on Vite's part to admit and subsequently correct their mistake, and I would like to encourage INPAWS members and supporters to frequent their business for vegetable and herb transplants. The native plants are scarce, but I did manage to find a table of *Asclepias tuberosa* (butterfly milkweed) for \$1.99 each, and there were other things here and there. Plus, I also picked up a couple of lovely hanging baskets of annuals for my mother.

The moral of the story is "yes, we can make

a change." As insignificant as one table of plants may seem, dame's rocket produces a copious amount of seed. The fifty or so plants that were removed from Vite's Greenhouse in 2012 may have stopped 500,000 plants from invading the wild in 2015 or 2016 🌱

Steve Sass is president of INPAWS' new North Chapter.

Hats Off



© Klein Prairie

*A Michigan garden center took dame's rocket (*Hesperis matronalis*) off sale after alert INPAWS volunteers called attention to the invasive plant's aggressive habits.*

Invitation

The next board and council meeting of INPAWS will be November 13 at 3:00 in the offices of the Nature Conservancy in at the Efroymsen Conservation Center, 620 East Ohio Street, Indianapolis, IN 46202.

Any INPAWS member is welcome to attend.

New INPAWS Members

North

Mary Haynes

Southwest

Steven A. Mussett

West Central

Darla Aldred

Central

Rosemary Jeffrey

Sue Loudermilk & Dr. Sameer Bhatia

Phil Waite & Lisa DeHayes

South Central

Mark & Kathy Sheehan

Stori Snyder

Dorothy D. Wilson 🌱

The Waterer

By Nancy Hill

My husband's a pretty smart guy. But I hate it when he's right in an area where I'm the expert.

I'm the gardener in the family. For over thirty years, I've designed the beds, bought the plants, planted the plants, and taken care of the plants. I love it. It's my passion. John has no interest in it. He likes cars. I would no more ask "Want to help me to pick out a witchhazel?" than he would ask "Wanna help me take the gas tank out of the '58?"

In the brief and scattered moments I've wished for his participation, I remind myself of gardener friends who have a spouse with an opinion—about where to place the serviceberry or sumac, when to cut back the Joe Pye weed, or how many Hot Papaya *Echinaceas* to group together. My garden is a one-cook kitchen and I like it that way. But as the workload has grown (I have home gardens, cabin gardens and I landscape around commercial buildings in Broad Ripple), I've increasingly needed help. I now hire people to spread mulch, weed, transplant and edge. What I can't do is hire someone to water.

No one waters my plants the way I do. For one, I water deeply. Only a person who loves a plant will really give it all the water it wants. Others can perform the task, but it's not the same, like taking your dog for a long, lovely walk versus hiring a dog walker. It's personal. Standing over a swamp mallow with a hose is a time when I look it over, see the shoots that emerged after I cut it back in May, compare its height to last year, assess when it might take over the sidewalk, delight in how many buds it has, and visualize how stunning it will be in a week or two with hundreds of deep red blossoms. If I don't actually talk to it, which I sometimes do, I'm still communing with it.

The few times I've hired someone to water, I watch a woman fan a spray of water over a large bed, which neither deeply waters nor communes. I instruct, I explain, but to her it is a patch of green, not a gathering of the individuals I chose and know personally. The welfare of the 'Henry Eilers' *rudbeckia* is not in her heart. She doesn't

Nancy Hill is a past-president, current Journal editor and long-time member of INPAWS. She uses native plants in her home and commercial gardens.

know that the 3-inch nubbin of green is one day going to be a spectacular 4-foot mass of yellow brown-eyed blooms and she is not motivated, therefore, to give him a long, deep, soaking drink that goes to his baby roots. There is no love going out to Henry.

The problem with watering is how much it was needed these past two summers of drought when nature's spigot closed tight for months at a time. Plants needed not hours but days of watering each week and there is a limit to the time I can stand in 99-degree heat, holding a hose.

So last year, out of desperation, I asked my husband for help.

"Just watering?" He asked, "That's it?"

I smiled inside. He thought watering was easy.

In a bad drought, when mulch hardens like a pie crust over every bed, water runs off like crazy. To prevent this, I explained, you use the watering wand. I carefully showed him how to stand over each plant, let the water build up, then absorb into the ground, over and over and over, until you know the water has gone through the mulch and into the dirt. The wand provides just the right amount of water, I said—a gentle 18" ring of droplets, soft enough to not run off but strong enough to eventually soak through to the plant roots.

This summer John again helped with the watering. And he was more than good-natured. He was (dare I say it) committed. Some mornings he left to water at the commercial buildings when I was still enjoying my second cup of tea. One day when I joined him, he dropped the bomb.

"I took the watering wand off," he said.

I looked at him. Was he nuts?

"But..." I choked out.

"Watch," he said.

I watched. A one-inch stream of water came hard out of the end of the hose. He aimed it next to a red salvia. The force of the water immediately dug a hole in the mulch. He moved the stream around the salvia. It dug a circle around it. A beautiful circle that held water like a bowl. I watched as that large bowl of water filled up, then disappeared into the mulch, into the dirt and down to the roots. The hose's hard stream did two things at once. It delivered lots of water and it loosened the mulch.



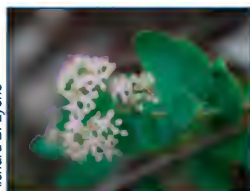
© 2012 Fankle

Hibiscus moscheutos (rose mallow or swamp mallow) is a tall wetland perennial found in many counties of the state. It blooms from July to October, in shades of white or pink, with a dark burgundy center. There are several cultivars; many are more deeply colored, like this one in bright red.

Waterer—continued on page 12

A Botanical Cliffhanger

Plant Profile



Richard B. Lyons

Sedum telephioides (Allegheny Stonecrop) has evolved desert-like succulent leaves that retain what little moisture comes its way. Mike Homoya, Indiana State Botanist, writes in Wildflowers and Ferns of Indiana Forests that Sedum ternatum (mountain stonecrop) and S. telephioides (Allegheny stonecrop) "are the only 2 native species of Sedum in Indiana, although there are several introduced naturalized ones."

By Richard B. Lyons

Sedum telephioides is classified as an Indiana rare wildflower. If anything, it is rarely found because it only grows in some of the most hostile and uninhabitable conditions imaginable. In Indiana it is almost only found on the very top of high limestone bluffs overlooking the Ohio River. Kay Yatskievych in her *Field Guide to Indiana Wild Flowers* lists *S. telephioides* as occurring in Clark, Crawford, Harrison, and Fountain counties. I have seen it several times in Clark County, but mostly find it at O'Bannon Woods State Park in Harrison Co. There it grows out of the fissures and cracks of the cliff faces that border the Ohio River. It ekes subsistence out of the few remnants of forest soil trapped in these fissures on a gravity-fed journey over the cliff's edge and to the talus slopes below. A beautiful plant whether in flower or not, *S. telephioides* has adapted to these conditions by evolving desert-like succulent leaves that retain what little moisture manages to come its way. Because of its rarity it should be left alone in its singular and out-of-the-way habitat and never be disturbed 🌿



Richard B. Lyons

Richard Lyons is a Master Naturalist and has been volunteering as naturalist at state parks since he retired from his job as a fireman twelve years ago. His passion is leading wildflower hikes in Southern Indiana.

The Waterer—from page 11

"I do a count of 60 on each plant," he said. "Of course that's not all at once. You have to move back and forth."

It took several seconds for a bowl of water to fill around each plant and while that soaked in, he moved over to the next one. Each plant got several bowls of water until it soaked in so slowly that you knew the ground was saturated. With a shrub, he held the hose above the main set of stems close to the ground and it usually kept absorbing for a full 60 seconds.

I watched silently, enjoying both the sight of quarts of water sinking into the dirt and the sound the thick stream of water made when it hit each bowl of water, a baritone of a sound, not the plinking of drops.

I have about six watering wands in my garage right now, hanging neatly on the wall. Some have never been used. And probably never will be. I'm still the gardener in the family. But every now and then I let my husband have an opinion 🌿

In the words of “Plain ol’ Charlie Deam”

By Kit Newkirk

Mike Homoya writes that Charles Deam was, well, eccentric. Homoya also writes that the best biography of Deam is *Plain Ol’ Charlie Deam* by Ralph Kriebel. Curious, I began poking around the web and found a post by Keith Board of northern Indiana at getyourbotanyon.blogspot.com listing choice quotations from Charles Deam. Here are some of Board’s favorites as well as others culled from Kriebel’s biography.

“I understand they are strongly recommending now that all the old cemeteries be planted with multiflora rose. When Gabriel sounds his horn, I am afraid some will be stranded and not be able to get thru the roses. Please do not recommend the multiflora rose except for the bonfire.”

“It makes my mouth sore to talk about multiflora rose.”

“...I have spent all my time on something I consider worthwhile. In so doing you meet a lot of opposition.”

“You know I am very hard of hearing when I can gather plants.”

“I shall never forget my toughest day. I started down a newly graded road (all roads unknown to me at that early date) of 4 miles. In the 4 miles I had to change tires three times. Inner tubes in those days were very poor quality. It was in the fall of the year with a strong wind and drizzling rain. I was from about 9:00 A.M. until dark making the 4 miles and I doubt if a single vehicle passed me that day.... I wanted to get off this road and when I did I drove into a woods and the car scarcely got over the side ditch when I was “in” to the hubs. So I just camped there that night but I did get out my stove and make some coffee to help me get down my bread and peanut butter.”

“I got well in spite of the M.D.’s.”

“Old General Debility will give the

commands, and believe me, you will obey.”

“A nosy automobile repairman asked Deam and Van Camp whether they were local men. ‘Nope,’ Charlie retorted, ‘we’re just passing through, like Pluto Water’.” (Pluto Water was bottled at French Lick, Indiana).

“Huffing and puffing to keep up with DenUyl one day in the late 1940s, Charlie said, ‘If I drop dead, just throw me on the nearest brush pile and keep going’.”

“Friesner, you collect grasses like a cow.”

“Doubtless sometimes you wish to call someone a mean name. Well I have found it. Just call him a sunflower. That combines all that is needed. The brutes have no principles, guided by no laws, and seem to be free-for-all.”

“I did my darnedest, and in it you have my measure.”

“I am just plain ol’ Charlie Deam and I never want anyone to think anything else.”



Keith Board

The best biographical book on Deam, according to Mike Homoya, is Plain Ol’ Charlie Deam by Ralph Kriebel.

Doug Tallamy To Speak

October 13, 8:30 – 3:00

Hendricks Co. Fairgrounds
Auditorium, Danville, IN

In a one-day seminar produced by the Hendricks County Master Gardeners, Dr. Doug Tallamy, University of Delaware Professor of Entomology and Wildlife Ecology, considered THE GURU of habitat gardening, will talk about how to use native plants in the garden and their impact on wildlife and the environment. Never miss a chance to hear Dr. Tallamy!

Also – Ellen Jacquart of the Nature Conservancy will identify invasive species and how to get rid of them. Fall is the best time to fight back invasives. AND...We’ll discuss the Hendricks County Pollinator Project.

Go to hendricksgardeners.com for registration information

Let INPAWS Help

Grants & Awards

Awards up to \$1,000

Our Small Grants Program makes awards of up to \$1,000 to projects that further INPAWS' mission: To promote the appreciation, preservation, conservation, utilization, and scientific study of the flora native to Indiana and to educate the public about the values, beauty, diversity, and environmental importance of indigenous vegetation.

These awards can be used in conjunction with other sources of funding. Successful awardees must prepare a report to share with the INPAWS membership after the project is completed. From time to time, larger awards may be made for special projects by presentation to the Executive Committee. All requests must be made in writing with a clear statement of how the award would further the mission of INPAWS and benefit the interests of our membership.

Small Grant Guidelines

Deadline February 1, 2013

Application Procedure

1. Cover sheet, including: name of project; amount requested; location; applicant/contact person information (name, address, telephone, email); specific name of person/organization to whom award checks would be payable; whether a new or existing project; category that best describes the project: research, training, education, conservation and habitat, demonstration garden, etc.; any prior INPAWS funding.

2. Text of proposal, not to exceed two pages: (a) summary of the project, not to exceed 60 words; (b) clear, concise description of the project, including: How does the project further the INPAWS mission? Why is the project needed? Specific objectives to be achieved. Specific information on how INPAWS grant funds would be used, including a detailed species list of all plants and seeds to be used. Who benefits from the project and how? How many benefit? Names of organizations involved, if any, with a brief description of each, including number of members.


Financial resources committed to the project from other sources, if any. Anticipated starting and completion date of the project.

3. Budget sheet, showing: (a) labor, material, and program costs; (b) sources and amounts of funds already raised, if any; and (c) total cost of the project. Please note that grant money will not be awarded toward transportation, lodging, or refreshment costs.

4. If applicable, a plants list may be included with the proposal either as an additional sheet or part of the text.

Submissions

1. E-mail (preferred): Send one copy to smallgrants@inpaws.org, noting the name of your project in the subject line.

2. Land mail: Send one copy, postmarked by February 1, 2013, to INPAWS Small Grants Program, P.O. Box 501528, Indianapolis, IN 46250. 

Inspiring youth about nature

Applications to Letha's Fund continue to roll in, from Elkhart to Randolph Counties, and points in between. Find out more about Letha's Fund at inpaws.org.

Here is what kids have said about their excursions into nature:

From second graders:

"...a lot of plants make food"

"I learned what poison ivy looks like"


"...the best part was when I got to hold a worm"

"Thank you Letha's Fund for not making my mom pay \$6."

From sixth graders:

"We put on skits for invasive plants just for you"

"...we found out that the park has lots of invasive plants especially Bush honeysuckle"

"Thank you for warning us about invasive plants and animals.....you guys are good people." 

Deam's Flora *continued from back cover*

In our efforts to protect Indiana's natural landscape we often find ourselves retracing Deam's footsteps. In one example, information found in the *Flora*'s account of bog bluegrass (*Poa paludigina*) revealed the existence of an unusual habitat for southern Indiana, resulting in the discovery not only of the rare bluegrass, but a site that would become a state-dedicated nature preserve.

Information in *Flora* has also been very useful in the restoration of landscapes. Because Deam collected plants in every township of the state, we have an excellent record of what occurred in an area historically. This has been especially helpful when attempting to restore areas that no longer possess their native veg-

*"Information in Flora
has also been very
useful in the restoration
of landscapes... Deam
collected plants in every
township of the state..."*

etation. A prime example involves an area in Daviess County, Indiana, where a major restoration project conducted by the Division of Nature Preserves has relied heavily on the *Flora* and Deam's plant collection for guidance. Landscape restorationists throughout the state would do well by utilizing the *Flora* in similar fashion.

The *Flora* is clearly more than a list of plants. Many treasures are found within its pages, ranging from topics on early 20th century agrarian culture to herbal cures. There are frequent references to discussions with "old timers," including some of whom were the first European settlers in the state. Also mentioned are accounts of Deam's own early activities on the family farm, such as when he used sciss-sors to cut cockle and rye in a wheat field, or pulled common purslane by the bushel and fed

it to the hogs. One of the most exciting bits of information, at least for me, was Deam's statement that he had in his possession two books owned by Dr. Asa Clapp, a pioneer botanist who lived in New Albany in the early 1800's. Dr. Clapp was Indiana's first resident botanist, and his records of the state's early flora are extremely important. Deam commonly referenced Dr. Clapp's records in the *Flora*, but their source was never clear to me. Then, during a cozy armchair reading of the *Flora* (yes, I enjoy reading the *Flora* like some read novels), I learned that Deam had owned Dr. Clapp's books, and that Clapp's records were written in them! That revelation, found specifically in Deam's accounting of *Trautvetteria*, ultimately led to the current location of Clapp's books.

I never had the pleasure of meeting Charlie Deam — I was born the year that he died — but I often sense his presence whenever I see one of his plant specimens, retrace his footsteps into a natural area, or better yet, open a copy of the *Flora*. It should come as no surprise that I have a special reverence for the man and his work. Thus it brings me great pleasure that the *Flora* is available again, allowing others to share in the pursuit of understanding, and ultimately the appreciation and protection of our native plants and natural areas. So whether you're a professional botanist, ecologist, teacher, wildflower enthusiast, naturalist, forester, wildlife biologist, soil scientist, landscape architect, horticulturist, or just someone wanting to know what that plant is in your backyard, this book is for you. 🌱

*From the preface to the reprinting of Flora
of Indiana, Item# 1-930665-598, \$124.95,
Hardcover, 1,236 pp.*

*Michael Homoya is a plant ecologist and
botanist for the Indiana Division of Nature
Preserves, a position he has held since 1982.
Regarded as one of the finest field botanists
of the Midwest, he is author of Wildflowers
and Ferns of Indiana Forests: A Field Guide
(Indiana University Press, 2012) and Orchids
of Indiana (Indiana University Press, 1993).*



Books



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Charles Deam is pictured with one of the 84,000 specimens he examined in preparing his magnum opus, *Flora of Indiana*, which was recently reprinted by The Blackburn Press.

Flora of Indiana

By Charles C. Deam, M.A., D.Sc., LL.D.

Preface by Mike Homoya

"I'll leave my obituary in the books I create." —Charles C. Deam (1865–1953)

Prophetic to his word, the books of Charles Clemon Deam — or simply "Charlie" as he was known to his friends — do indeed reveal much about the man. A druggist, forester, and botanist from Bluffton, Indiana, Charlie Deam was meticulous, opinionated, studious, disciplined, driven, and even, shall we say, eccentric. Simply put, he was a character. But that character produced a collection of some of the most thorough botanical works ever published. His standards were high, as perhaps is best revealed in his magnum opus, *Flora of Indiana* (hereafter, the *Flora*). Published in 1940, with reprintings in 1970 and 1984, the *Flora* has served as the standard by which other state *floras* must be compared. Now over 60 years old, it has clearly withstood the test of time, and continues to be a primary source of information for any serious student of field botany.

Deam insisted upon the highest standards for his work, and strove to make the *Flora* as accurate as possible. That was clearly the policy when considering a species for inclusion in the book; it was his rule that every species included must be vouched for by at least one collected specimen. He examined over 84,000 specimens in preparation for the book, and from these he prepared keys, species accounts, and range maps showing species' occurrence by county. Although these maps reflect the knowledge only as it existed in 1940, they continue to be useful today in determining a species' general range in the state. This is especially helpful for the beginner, or one not familiar with Indiana's *flora*, as it can reduce the field of options when trying to determine an unknown plant's identity.

"Where's Deam?" is not an uncommon cry heard around the office in the Indiana DNR Division of Nature Preserves. It's not a person being sought, but rather a misplaced copy of a book that we simply can't do without. Early on we declared that the *Flora* would be our starting point in creating the first state list of rare, threatened, and endangered plant species. The *Flora* continues to be one of the first choices to consult when gathering information on wild plants. However, the utility of the *Flora* extends beyond species identification, range, and habitat.

"Deam was meticulous, opinionated, studious, disciplined, driven, and even, shall we say, eccentric."



inpaws journal

Indiana Native Plant and Wildflower Society

Winter 2013

Indianapolis' Vanishing Native Flora

Butler University research draws attention to effects of urbanization

Hats Off



Queen of the prairie (above) is among the native plants lost to Indianapolis, according to research by Becky Dolan's team at Butler University. It was last found growing outside of cultivation by the Water Canal at 52nd Street in July 1935.

How exactly does urbanization affect biodiversity? It is a question that becomes more pressing every day, now that more than half of the world's population lives in cities. It is a question asked by INPAWS' own Dr. Rebecca Dolan, director of the Friesner Herbarium at Butler University. In one of the first studies of its kind, Dr. Dolan led a team of ecologists to use 70-year-old dried plant specimens to track the impact of increasing urbanization on plants. The results were published in March, 2011, in the British Ecological Society's prestigious *Journal of Ecology*.

Dr. Dolan and her team examined 2,800 dried plants collected around Indianapolis before 1940 and compared these with plants they, their students, and others found at 16 field sites between 1996 and 2006. They discovered that increasing urbanization has wrought major changes to Indianapolis plant populations.

Although the city supports a similar number of species as before 1940 (around 700), today's flora has fewer native plants and more non-native species – plants introduced from other parts of the world that are now spreading on their own.

Trees to farms to city

In the 1820s, 98% of Marion County was covered in forest. Most (over 70%) was beech and maple upland forest, with a small amount of oak-hickory forest on drier ridges. One hundred years later, by the 1920s, about 80% of the county's land had been turned over to agricul-

ture. In the next 40-50 years, due to the rapid urbanization of Indianapolis in the 1960s and 70s, agricultural land plummeted from 80% to only around 18%.

The study found that over the past 70 years, Indianapolis native plants have been lost at a rate of 2.4 species per year, and over the same period 1.4 non-natives arrive each year. According to Dolan: "This study shows that our flora is becoming less distinctive."

Plants now lost to Indianapolis include Queen-of-the-prairie (*Filipendula rubra*), a member of the rose family with fantastic wands of pink flowers. It was last found growing in a damp spot by the Water Canal at 52nd Street in July 1935. Another loss is the Virginia bunchflower (*Melanthium virginicum*), a member of the lily family with striking stalks of white flowers.

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Unwelcome arrivals include the invasive Japanese knotweed (*Fallopia japonica*) and the despised Amur bush honeysuckle (*Lonicera maackii*). "Japanese knotweed was brought to our area as an ornamental. It spreads readily by seed and by root sprouts, forming thickets that choke out native species," says Dolan.

"Amur bush honeysuckle was once promoted by the USDA's Soil Conservation Service for erosion control and wildlife food, but we now know it does neither. Instead, it has spread and become a pest plant, covering the banks of

Butler – continued on page 13

Residents Fight Invaders

Members of Brown County Native Woodlands Project map and eradicate weeds in treasured state park, across county

Hats Off

by Leslie Drahos

Weed Patch Hill in Brown County State Park is the second-highest spot in the state of Indiana. The site was a major attraction in the county even before the park opened to the public in 1929.

Named by a party of Kentucky hunters who found a “rank weed growth” atop the 1,058-foot-tall hill, the name might not have stuck had the Brown County Native Woodlands Project (BCNWP) been around in the early 1900s.

Founded in 2006 by a handful of residents worried by the rapid expansion of invasive plants in fields, forests, and on roadsides, the BCNWP’s mission is to protect county land from exotic plants through education, training, and eradication.

After creating a map showing the roadside extent of four targeted invasive plant species throughout the county in 2007, BCNWP began eradicating nox-

ious weeds, training volunteers, completing more than 70 free invasive plant assessments on private property, and creating an informative website, bcnwp.org.

As an educational outreach effort, an invasive species packet on the website includes a calendar of control that identifies noxious plants, color codes the most effective herbicide products for each, and indicates the best months to spray – critical knowledge for conscientious landowners.

And while the BCNWP wasn’t around when Weed Patch Hill earned its name, the group aims to keep the rest of Brown County State Park from resembling that moniker. In 2011, the BCNWP sponsored and helped fund a digital invasive plant survey to pinpoint the extent of non-native plants growing in the 16,000-acre park and presented the resulting map to the park to guide treatment of invasive plants on park property and document the need for funds to control invasive plants in the future.

A Ravine Revealed

A catalyst to the inception of the BCNWP occurred in 2002, when members of the Brown County Public Library Board and its director saw invasive species had obscured the view of a small stream meandering through a wooded ravine behind the library in Nashville, Ind., the county seat. To solve the problem, a citizens committee was formed to find funds to eradicate the exotic invasive species and replace them with shade-loving native plants.

In 2003 and 2005, the Indiana Native Plant and Wildflower Society (INPAWS) awarded grants to the project totaling \$3,000, and the committee hired a contractor to apply herbicides on weeds and to reseed with native grasses and sedges.

A Pioneer Volunteer

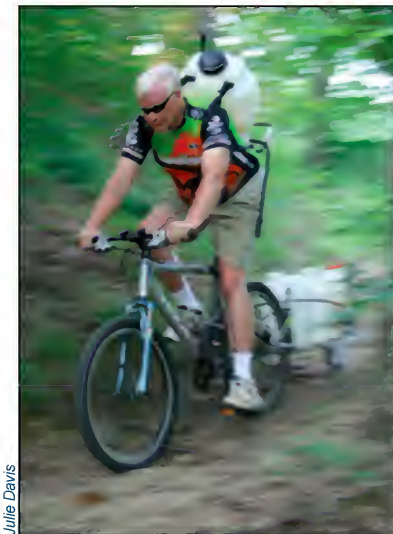
A formative force behind Brown County’s largely volunteer invasives-fighting effort is Ruth Ann Ingraham, an Indianapolis resident who bought a small cabin in Brown County with her husband in 1990.

A co-founder of INPAWS in 1993, Ingraham and others took action when invasive plants in Brown County began to proliferate. Ingraham chaired the Brown County Library Ravine Project and then co-founded the nonprofit BCNWP in 2006.

An active contributor to the INPAWS journal and the BCNWP newsletter, Ingraham tirelessly supports community events that enhance public awareness of native plants versus exotic invasives. She personally conducts free invasive plant surveys on request from private landowners. In 2012, landowners could apply for grants offering a 50 percent reduction on the cost of eradication, a perk provided by funds from the Southern Indiana Cooperative Weed Management Area (SICWMA).

On Ingraham’s wish list for future weed control is an ordinance governing which plants may be introduced safely into the landscape.

Ingraham credits the success of BCNWP to a highly dedicated community, plus the financial help and support provided by Dan Shaver, director of



Julie Davis

Mountain biker Leg Logterman has led the effort to control invasive plants throughout Brown County State Park.

BCNWP Board

Jim Eagleman
Bill Freeman*
Ruth Ann
Ingraham*
Peg Lindenlaub*
Len Logterman
Dan McGuckin
Donna Ormiston*
Cathy Paradise
Dave Richards
Jane and David
Savage*
Dan Shaver

**INPAWS members*

Brown County – continued on page 11

Milkweed & Monarchs

by Kit Newkirk

Coming across butterflies basking, puddling, or nectaring in the landscape is one of life's pleasures. Some would argue that an even

over nine to 14 days. In the process, the larvae accumulate and sequester molecules called cardenolides which persist through metamorphosis, making the adults unpalatable, even

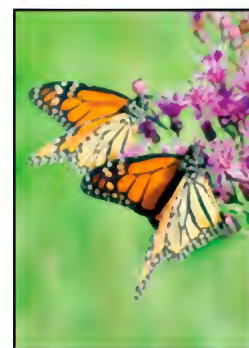
toxic, to predators.

Female monarchs lay eggs on more than 20 species of *Asclepiadaceae* in the eastern US. But according to MonarchLab at the University of Minnesota, they are choosy about their milkweed. They will deposit eggs on *Asclepias tuberosa*, the showy butterfly weed, but actually prefer some other species such as common milkweed (*A. syriaca*) and swamp milkweed (*A. incarnata*). Caterpillars have higher rates of survival on the latter species. The monarch moms' choosiness is warranted and may relate to cardenolide levels.

Milkweeds produce cardenolides in varying quantities. Caterpillars born onto plants with high levels of cardenolides have lower survival rates than those on moderately toxic milkweeds. In addition, the milky latex that lends milkweed its common name can "gum up the mandibles of small larvae" (MonarchLab).

With jaws glued shut, the little caterpillars have to stop eating. Latex may be implicated in as much as 30% of larval failure. Caterpillars have been observed using strategies to cut off the

Host Plants



While monarch butterflies feed on the nectar of many flowers (above), their larvae (lower left) are dependent on milkweed for sustenance. But milkweed poses challenges to the hungry, hungry caterpillars including toxins and gluey latex.



greater pleasure is to grow plants specifically for butterfly larvae and discover them munching away on the leaves. Among these are gardeners who cultivate varieties of milkweed (*Asclepiadaceae*) for the purpose of nurturing monarch butterflies (*Danaus plexippus*).

While monarch butterflies will feed on the nectar of many flowering plants, the larvae depend entirely upon milkweed for food. In warm summer weather they hatch from eggs laid on the underside of milkweed leaves and begin eating virtually nonstop through five instars (the periods between molts),

Milkweed – continued on page 9

Perils of the Beach Pea

First of two chapters

by Barbara Plampin

Because beach pea (*Lathyrus japonicus* aka *L. maritimus*) grows in sandy dumps, like one in Mackinaw City and another in Paradise, Michigan, surely it should survive anywhere. Not so at the Indiana Dunes National Lakeshore (INDU) where our state endangered variety, *L. japonicus glaber*, once known from three sites,

Plant Profile



Wikipedia



wildflowersofindiana.web

Two scientists have befriended the beach pea, which is nearly gone from Indiana despite its ability to grow a tap root up to two meters long.

is now extirpated (extinguished). One INDU site is known only from an herbarium specimen; others supported only one or two plants. The site I found had one dead plant and one struggling against shade and smothering grasses. It too died.

In Indiana Dunes State Park one remaining population survives. The villains are mostly human activities: trampling and jetties, breakwaters, piers that alter sand accretion and erosion, as well as climate change with its potential alterations in lake levels. That beach pea is at the southern end of its midwestern range probably enhances its troubles.

Beach pea is found in a scattering of locations around the world – on both shores of the North Atlantic and North Pacific oceans, on both sides of the equator, and on the shores of some inland lakes. It has been reported from Bass

Lake in Starke County, and it definitely grows on the shores of Lake Winnipeg, Canada. It is also reported in Chile. In the Midwest it is a coastal plain disjunct; the plant may have worked its way from the Atlantic seaboard to the Great Lakes via Lake Champlain.

Beach pea, a perennial, can sprawl over sand in arresting patches nearly two meters across with meter-long branches bearing somewhat fleshy pinnate leaves and racemes of butterfly-like red-purple or pink flowers. Voss writes of white flowers on Lake Superior plants, and the flower I saw at Grand Mere near Stevensville, Michigan, was an almost royal blue. You can recognize vegetative (non-blooming) plants by their characteristic stipules (appendages situated on either side of a leaf axil). A beach pea's survival is supported by three things: a tap root up to two meters long that can reach the lower water table, rhizomes that pull water closer to the surface, and leaves with stomata (pores) that close and allow the leaf to fold during the worst heat of the day.

In 2007, fate smiled on the Indiana Dunes beach pea with the emergence of a symbiotic relationship between two beach pea advocates. INDU biotechnician John Dollard was writing his MS thesis at Governors State University in Chicago. His goal was to determine the supplementary watering needed to establish young beach pea plants as yet without rhizomes and long tap roots. Meanwhile, INDU botanist and rare plant expert Dr. Daniel Mason had already decided (in 2005) to re-introduce the beach pea in the Dunes. Dollard realized that he could benefit from Dr. Mason's seed collecting in Dunes State Park (by DNR permit) and from the special, raised, sand-filled bin that Mason constructed for growing his greenhouse-raised seedlings (seeds were stratified and scarified). Conversely, Mason saw that he would benefit from Dollard's discoveries made over 2007–2009 about supplementary watering.

Dollard started with a pilot study. First he had to select the sites at which to grow and control the watering of his young beach pea plants. Before he did this, he examined re-introductions of other species in sandy sites along both fresh and salt water and visited other Great Lakes beach pea sites in a range of habitats. At some

sites, as on Michigan's Keweenaw Peninsula, plants grew at the water's edge where rhizomes were exposed by waves. At all sites, rhizomes rather than seeds appeared to be the chief means of reproduction. Dollard had to negotiate numerous and varied mind-numbing statistical techniques to measure such variables as seedling size, slope, aspect (a site's relation to the sun), sand accretion, and erosion.

One summer, Dollard and friends carried more than 2,600 gallons of water from Lake Michigan to experimental plantings of beach peas

When he was ready, in 2007, Dollard chose six sites split among three locations in the western part of the Dunes National Lakeshore where trampling and human barriers to sand movement were less likely. Each site had somewhat different conditions, but each was a 27-meter transect perpendicular to prevailing winds. Each site had twenty identically sized areas divided into ten pairs. In each pair, one area received no supplementary watering (only natural precipitation), and one received both natural precipitation and supplementary watering from Lake Michigan. Dollard transplanted five seedlings into each quadrant for a total of 300 plants.

Using a backpack sprayer and five gallon jugs, Dollard carried seven and a half liters from the Lake thrice weekly from June to October to each of the supplementary water areas. This means that he and occasional helpers carried more than 2600 gallons of water in 2007 and more than that in 2008 when he added another site. Remembering that one gallon of water weighs 16 pounds, it's no wonder that Dollard's is a Lincoln-esque long and lanky build.

The 2007 plants fared very poorly. By October, all looked dead, though a few transplants produced new shoots. Were the plants actually dead or just dormant because of heat?

In Chapter II we discuss what Dollard learned from his pilot study failures, detail the 2008 re-

Winter Tree & Shrub Identification Hike

Wonderful, woody, winter wonderland of trees and shrubs native to Indiana

When: Saturday, January 12 – 1:00 p.m. to 3:00 p.m. – Eastern Standard Time.

Where: The property of Harmon and Sally Weeks, located approximately 7 miles northeast of Attica, Fountain County, Indiana.

Leader: Sally Weeks, dendrologist, Purdue University Department of Forestry and Natural Resources.

What to See: There will be many trees and shrubs in their "all-together" and Sally will offer tips on how to recognize winter characteristics – in particular, buds, twigs, and bark.

Directions: Meet at the ShopCo parking lot on the east end of Attica (it is along Hwy 28 across from the Pizza Hut) at 1:00 p.m. Sally will be there and will guide people to her property where she will show and compare many of the species that she grows around her house as well as those occurring naturally in the woods nearby.

Questions: Contact Sally Weeks by email: weeksss@purdue.edu or by cell phone: 765-404-2947.



Krt Newmark

Can you identify this tree?

Learn how to use buds, twigs and bark to recognize trees and shrubs during INPAWS' winter hike with dendrologist Sally Weeks on January 12.

(Answer – page 9)

introduction, and bring the subsequent history of the beach pea up to date. 🌱

Barbara Plampin is a Life Director of the Shirley Heinze Land Trust and a field botanist. She does rare plant monitoring, often for the Indiana Department of Natural Resources. She holds a Ph.D. in English and lives in the Indiana Dunes. Literature list available on request.

Incoming!

An updated version of the full color flyer "Keep A Lookout! For New Invasive Plants in the Midwest" is available from the Midwest Invasive Plant Network.

The two-page flyer features 16 species that are relatively new to the Midwest, with information on how to identify the species, a county map distribution for all Midwest states, and directions on how to report new locations.

New species to watch for include Chinese silvergrass, Japanese chaff flower, Japanese wineberry, narrowleaf bittercress, and lesser celandine. Download a copy now from http://mipn.org/MIPN_Terrestrial_Flyer_2012_highres.pdf.

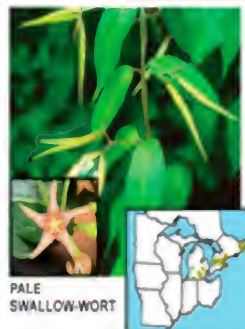
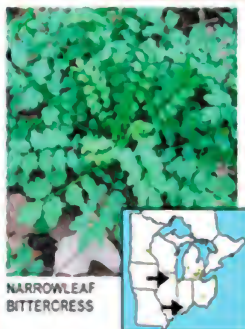
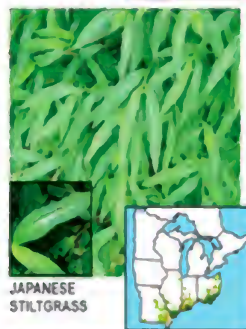
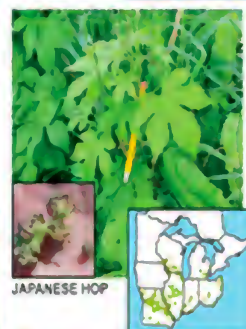
KEEP A LOOKOUT!

for **NEW INVASIVE PLANTS** in the Midwest!



Early detection and eradication can prevent an invasion. The maps show current reported distribution in the Midwest, including Ontario.*

☐ Not known
 ☒ Isolated (→ = single county reports)
 ☒ Locally abundant
 ☒ Widespread



To report a sighting, please contact: www.GLEDN.org

**For Chinese silvergrass, please report escaped populations only, not intentional plantings.

*Updated May 2012

See reverse side for species descriptions

Consistent, documented, based in science

New Indiana Invasives List Released

by Ellen Jacquart

Over the years, I've gotten into lots of conversations with people about which plant species are invasive in Indiana. There are multiple lists floating around, some specific to a particular county, or to just aquatic plants, or to horticultural plants. For most of the lists, plants are included based on informed, even expert opinion, but not through a uniform collection of data, with documentation, saying exactly why a species is considered invasive. It is confusing when a species is deemed to be invasive in one brochure and not another.

Not satisfied with this situation, the Invasive Plant Advisory Committee (IPAC) of the Indiana Invasive Species Council (IISC) took on the challenge of creating a consistent, science-based, well-documented list of invasive plants for Indiana. With the help of interns and IPAC members, the list was created this year and was approved by the Invasive Species Council at their September 2012 meeting. There are nearly 100 species on the list, each having been carefully assessed and measured as to its invasiveness using the most recent information available from the literature and from invasive plant watchers in Indiana. The complete Indiana Invasive Plant List is available on the IISC website (<http://www.entm.purdue.edu/IISC/invasiveplants.php>) and each of the plant assessments is available for review and comment.

We had a head start on this project because of the many invasive plant assessments that were developed by the Invasive Plant Species Assessment Working Group (IPSAWG), a collaborative effort between land managers and the nursery/landscaping industry, between 2001 and 2006. The group developed an assessment tool to evaluate and rank each species. All those assessments were reviewed and updated as needed to determine inclusion in the invasive plant list. We were also able to adopt the recent assessments of aquatic plants by the Aquatic Invasive Work Group.

The Indiana Invasive Plant List is not finished by any means, as there are still a few dozen species in line to be assessed, waiting on the time, energy and volunteers necessary. Still, the invasive plants that seem to be having the greatest impacts in Indiana have been assessed and are on the list. The intent of IPAC is to review the list at least

once per year and make any needed additions or changes, each time with the approval of the IISC.

In addition to approving this list at their September meeting, the IISC has asked the regulator of Indiana invasive plants for the Department



of Natural Resources to explore removing highly invasive species from trade. This is a big step to take, but IPAC strongly believes it is warranted.

In 2006, IPSAWG produced a brochure called "Landscaping with Non-invasive Plant Species: Making the RIGHT Choice" to identify invasive garden plants and recommend that people avoid using them. Six years later 100,000 of those brochures have been printed and disseminated, but it is apparent that education, while important, is not enough. It is time to take the next step and ensure that the most damaging invasive plant species cannot be sold or purchased in Indiana. Stay tuned! 🌱

Ellen Jacquart is the Director of Northern Indiana Stewardship for The Nature Conservancy, coordinating land management on Conservancy lands and working on invasive species issues. At home, she battles multiflora rose and autumn olive on her land in Monroe County and gardens as best she can in the pottery-clay-like soil of northwest Monroe County.

Chinese silvergrass (Miscanthus sinensis) is detailed in the updated Indiana Invasive Plant List (left) and featured on the new flyer, "Keep a Lookout! For New Invasive Plants in the Midwest" (opposite).

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Check out
INPAWS'
great blog at
inpaws.org



Officers

President	president@inpaws.org
Art Hopkins	812-372-2862
Past President	pastpres@inpaws.org
Tom Hohman	317-831-1715
Vice President	vicepres@inpaws.org
Melissa Moran	317-295-2021
Recording Secretary	recsecty@inpaws.org
Amy Perry	317-595-9545
Corresponding Sec	corsecty@inpaws.org
Fiona Becker	317-373-3631
Treasurer	treasurer@inpaws.org
Marilyn Frohberg	317-254-1660

Membership	membership@inpaws.org
Wendy Ford (interim)	317-334-1932
Native Plant Rescue	rescue@inpaws.org
Open	
Plant Sale Auction	plantsale@inpaws.org
Ross Nelson	
Public Outreach	public@inpaws.org
Karen LaMere	317-752-5444
Website	webmaster@inpaws.org
Wendy Ford	317-334-1932
Youth Outreach	youth@inpaws.org
Open	

Chapter Leaders

North	northeast@inpaws.org
Steve Sass	574-287-8939
Central	central@inpaws.org
Amy Smith	317-690-4507
South Central	southcentral@inpaws.org
Steve Dunbar	812-325-0968
West Central	westcentral@inpaws.org
Reni Winter	765-714-4288
Southwest	southwest@inpaws.org
Davie Sue Wallace	812-963-3930

Committee Chairs

Annual Conference	conference@inpaws.org
Open	
Conservation	conservation@inpaws.org
David, Jane Savage	317-873-5083
Garden Tour	gardentour@inpaws.org
Ann Foster	317-254-9195
Grants & Awards	smallgrants@inpaws.org
Jackie Luzar	
Hikes & Field Trips	hikes@inpaws.org
Mike Homoya	
Historian	historian@inpaws.org
Ruth Ann Ingraham	317-253-3863
Hoosier Outdoor Exp.	hoosier@inpaws.org
Amy Smith	574-229-8782
Invasive Plant Edu.	invasives@inpaws.org
Ellen Jacquart	317-951-8818
Journal Editors	journal@inpaws.org
Nancy Hill	317-283-8345
Kit Newkirk	765-719-0414
Landscaping Support	landscape@inpaws.org
Sue Nord Peiffer	317-920-2652

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INPAWS JOURNAL is published quarterly for members of the Indiana Native Plant and Wildflower Society. Material may be reprinted with the permission of the editor.

Submissions

All are invited to submit photos, articles, news, and event postings. Acceptance for publication is at the discretion of the editor. INPAWS welcomes differing points of view.

Please submit text and high resolution photos (300 ppi) via e-mail to journal@inpaws.org or via land mail to INPAWS JOURNAL, 5304 Carrollton Avenue, Indianapolis IN 46220. Submission deadlines for specific issues are:

Spring – February 23 for April 1 mailing
Summer – May 23 for July 1 mailing
Autumn – August 23 for October 1 mailing
Winter – November 23 for January 1 mailing

Mission

To promote the appreciation, preservation, conservation, utilization and scientific study of the flora native to Indiana and to educate the public about the value, beauty, diversity, and environmental importance of indigenous vegetation.

Membership

INPAWS is a not-for-profit 501(c)(3) organization open to the public at inpaws.org.

Share

Please direct Information of interest to webmaster@inpaws.org.

We love to share the fun

Being a member of INPAWS gives you a ring-side seat to our many activities and events. But don't sit the game out. You can join in the fun, working with others and accomplishing the goals of INPAWS either state-wide or within your own community. Staff a booth for two hours, brainstorm with a committee, or even chair or co-chair a special event. Whatever the task, you will learn from and be guided by those who have done it before. Want to rescue plants at construction sites? Write about your favorite plant? Help others establish a native garden? Advocate for green causes with local and state government? Contribute photos to the Journal or other print materials? Maybe spreadsheets are your passion. Whatever your skills, large or small, we encourage you to use them as an INPAWS volunteer. Opportunities can be found on our blog at inpaws.org, the website itself, Facebook, or in INPAWS emails.

Opportunities:

Be on the committee to plan and organize the next **Plant Sale and Auction**, May 11, 2013. Contact Ross Nelson – plantsale@inpaws.org.

Staff the INPAWS booth for a two-three hour shift at the **Flower & Patio Show** in March. Contact Karen LaMere – public@inpaws.org.

Chair the committee to plan the **INPAWS Annual Conference** November 2013. Contact webmaster@inpaws.org.

Chair the **Youth Outreach / Letha's Fund** committee. Contact webmaster@inpaws.org.

Milkweed – from page 3

flow of latex such as biting through veins that carry latex and toxins.

Unfortunately, monarch mothers will also lay eggs on related invasive species from central Eurasia including European swallow-wort (*Cynanchum rossicum*) with very poor outcomes. Swallow-wort is rated highly invasive on the most recent list of plants invasive in Indiana (see page 6).

Answer – from page 5
The bark pictured is that of the black walnut (*Juglans nigra*) tree.

Save the date: April 20

Central Chapter members – check your calendars for next April. If you enjoy outdoor exercise, natural areas, and the companionship of others with similar interests, plan on joining us April 20 at the Mary Gray Bird Sanctuary near Connersville. The Central Chapter Invasive Swat Team will be on hand to remove garlic mustard, oriental bittersweet, and whatever other non-native, invasive plants are encountered.

The Mary Gray Bird Sanctuary is owned by the Indiana Audubon Society. Over 700 acres of mostly wooded property have hiking trails, a primitive campground, several small ponds, and two indoor meeting spaces. While the property is generally a high quality natural area, it does suffer from the inevitable intrusion of non-native, invasive plants.

We will cut out large oriental bittersweet vines but most of the work will be pulling garlic mustard plants. INPAWS members will work alongside volunteers from the Indiana Audubon Society, which is providing lunch for all workers. Those coming from the Indianapolis area can join organized car pools. Look for detailed information on the INPAWS blog, but anyone interested in helping should contact Tom Hohman at pastpres@inpaws.org to ensure you receive up-to-date info as the date gets closer.

New INPAWS Members

North

Sherry Nagley
Eric Neagu
Julie Roesler & Fred Utroske
Robert W. Trimmer
Henrietta Tweedie
Sherry Wagley

South Central

Joe & Nancy Kimmel

Southwest

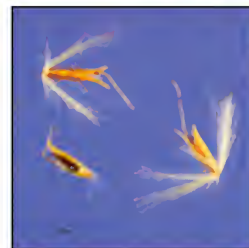
Jay C. Scott
Linda & Larry Wilcox

West Central

Bria Fleming & Tony Capizzo
Wes Homoya

Central

Chris & Kathy Anderson
Jacquie & Randy Banks
Rosemary Fanning
Ellen Germaine
James D. Loose
Michael & Dawn Olenjack
Mary Ruby
Sonja Simpson
Lynne Tweedie
Phil Warrenberg
Dianna Zamani



Flowers and seeds of Chinese silvergrass (*Miscanthus sinensis*) which grows up to 12 feet tall in dense, highly flammable bunches. It escapes ornamental plantings and invades roadsides, forest edges and old fields, displacing native vegetation and increasing risk of fire.

Cross-pollination

Native plant lovers can benefit from Master Gardener training



by Amy Perry

Last fall I signed up for Master Gardener training with Purdue Extension–Hamilton County, and I'm glad I did. I wanted more plant variety in my yard but was uncertain of my horticultural expertise. I learned a lot, had fun, and feel more confident.

In talking with other INPAWS members who've taken the training, I discovered that the purposes of INPAWS and the Master Gardener programs are quite complementary. In both, there are opportunities to educate others about native plants and to network with people interested in green topics. They both promote and teach good horticultural practices and although the MG focus is on backyard gardening in general, many MG presentations and projects are applicable to native plants.

The Master Gardener Program

Master Gardeners is an education and outreach program run by land-grant colleges that teaches good gardening practices to members of the public, who are then encouraged and empowered to teach others. The MG Association motto is "Helping Others Grow." It began in Seattle in 1972, out of a demand for home gardening information. Indiana's program, started in 1978, is administered by Purdue University through county extension offices. Out of our 92 counties, approximately 86 boast MG programs. (Neighboring states have MG programs also.)

The program consists of education plus volunteer service. After attending classes and passing a basic course, one completes at least 35 hours of volunteer service (or more, depending on the county) during the following year. Do not let the designation "Master" intimidate you. As Marcy Dailey, INPAWS North Chapter member, says, "A MG isn't expected to be a 'master of gardening.' Instead, we assume the role of a reference person with knowledge of how to access information on sound gardening practices."

To maintain the Master Gardener designation, one completes a minimum of twelve service hours and attends six hours of education annually (some counties require more). One can also advance to higher MG designations via additional education and projects.

For volunteer hours, many if not all MG associations give credit for INPAWS projects and

presentations. INPAWS volunteers take note – Master Gardener volunteers are a handy pool of people to call on for help with an INPAWS project!

Learning and Teaching

Many topics in the basic MG coursework apply to native plants, such as soils/plant nutrition, plant science, woody ornamentals, propagation, and landscaping. Often the educational presentations at Master Gardener meetings are relevant to native plants as well. To my delight, topics at the 2012 state conference included diagnosis of plant problems, garden photography, milkweed for monarchs, small pond management, planning for integrated pest management, highway beautification with natives, effective use of common areas, and gardening for birds.

The MG volunteer service activities are great opportunities not only to learn but also to teach others about native plants. MG programs include answer lines, speaker's bureau, propagation classes, tree sales, garden tours, plant potting, and heirloom gardens, as well as 4H wildflower projects and many other youth programs. The 2010 Indiana Master Gardeners report states that Indiana MGs made over 100,000 contacts with Indiana citizens, and more than 3200 MG volunteers actively volunteered over 122,000 hours to educate their fellow community members. INPAWS members Dan and Sophie Anderson say they have learned a lot about natives from other INPAWS members in their MG association. Several INPAWS-MG members express satisfaction that they can educate others through MG plant sales, newsletter articles, teaching MG classes, and presenting INPAWS volunteer opportunities to MG intern classes.

Public display gardens maintained by MG associations often use native plants, for example, the Master Gardener's Native Plant Garden and the Butterfly Garden at Wesselman Nature Center in Evansville, the Bird and Butterfly Garden at Salamonie Reservoir, the rain garden at the Indianapolis Museum of Art, and the Forks of the Wabash pocket gardens. I help with two Hamilton County MG native beds, and I like the ability to experiment with more plants than I can handle in my own gardens.

A minor caveat to INPAWS members with a high level of expertise: although you likely will learn

Proposals Invited

Know of a special project or landscape that needs funds? INPAWS funds are available for projects around the state that promote the appreciation, preservation, and use of native plants.

Deadline for applications for INPAWS Small Grants is February 1, 2013. See inpaws.org for application information.

things and enjoy the people you meet, I suggest that before enrolling in the training, you find out what material applicable to native plants will be covered. Counties vary in activities and course content. On the other hand, if the MG association you join lacks a certain program that you would like, your county coordinator may let you create one.

Networking

Master Gardeners work on projects with organizations that have goals similar to those of INPAWS. Dona Bergman, a member of INPAWS' Southwest Chapter, describes a kudzu eradication and habitat restoration project across from the Mesker Park Zoo and Botanic Garden in Evansville involving the Southwest Indiana INPAWS chapter, her MG association, area Master Naturalists, the local Soil and Water Conservation District, and the Southern Indiana Weed Management Cooperative Area, among other organizations. She highlights the joy and enthusiasm many INPAWS-MGs get from these cooperative efforts. "Most importantly," she says, "the wonderful people who belong to these groups understand we are working toward many of the same goals; we have shed the territorial mentality that plagues many organizations and work together for a better, greener, cleaner community – AND WE HAVE FUN AND ENJOY EACH OTHER!"

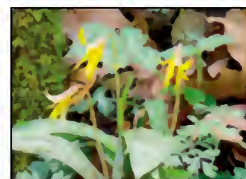
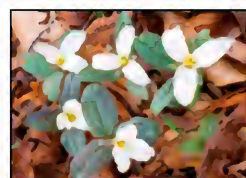
For gardening-based knowledge, camaraderie, and green action and outreach opportunities, MG is a cross-pollinator par excellence! Suzanne Stevens (INPAWS Central Chapter) advises INPAWS members who are considering becoming a Master Gardener, "Learn all you can and use your information to plant a lot more natives!"

To find a Master Gardener program near you, visit http://www.hort.purdue.edu/mg/basic_training.html. 🌱

Amy Perry is an INPAWS Central Chapter member and a Master Gardener in the Hamilton County Master Gardener Association.

Brown County – from page 2

The Nature Conservancy's Brown County Hills Project; SICWMA; the Brown County Soil and Water Conservation District; and the Hoosier Mountain



Lynne Tweedie – all

Early spring blooming snow trillium (left and top) and trout lily make good companions for sharp-lobed hepatica, according to Patricia Happel Cornwell (page 12). In her garden, trillium and hepatica sometimes bloom together; other times the hepatica blooms just a bit later than the trillium.

Bike Association whose donation enabled treatment of species, specifically Japanese stiltgrass, along 25 miles of Brown County State Park's renowned mountain bike trails.

In a perfect Brown County, non-native invasive plant species would not exist. But as Ingraham notes, "There is no way we could reverse the march of invasives if it were not for herbicides." 🌱

Leslie Drahos is a freelance writer in Sagamore Hills, Ohio. Reprinted with permission from pwmag.com, Public Works online magazine, August 13, 2012.

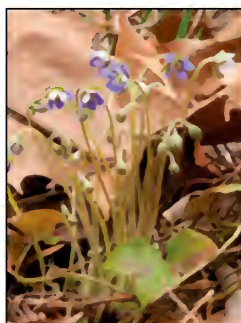
Woodland Surprise

Sharp-lobed hepatica brings bloom to late winter woods

Plant Profile



Lynne Tweedie



In the late 1800's, over 450,000 pounds of hepatica were collected annually as an herb for medicinal purposes.

by Patricia Happel Cornwell

Midwestern gardeners generally have low expectations when going for a walk in winter. Cold wet winds, perhaps some lingering snow in the north and east, do not promise an abundance of bloom in late February and early March. But there are some fully opened flowers to be found in native woods and gardens where bundling up for a winter walk can be rewarding.

The sharp-lobed hepatica (*H. nobilis* var. *acuta*) is the species I find closest to my home. Within walking distance of my garden is the Blue River with its limestone bluffs. I find colonies of very old plants all along those rock ledges, usually in pockets of leaf mold over rocky soil. I have seen a few growing beneath sheets of moss on large boulders. The prevailing color of bloom seems to be white, but on occasion there is lavender-blue. When watching for nice color forms, pay particular attention to the stamens. On occasion the stamens will be a contrasting color to the sepals. The flowers are actually composed of showy, ¾-inch sepals that appear as petals. Stems are quite hairy and the fuzz is very apparent on new stems. Flower stems reach from four to about eight inches in height. Bloom period is from late February to mid-March and well into April.

In late fall and early winter the foliage turns bronze, adding to the show. Foliage is evergreen on hepatica, but very tattered by late winter. Just as blooms fully appear, new softly hairy leaves unfold. The amount and pattern of mottling in hepatica foliage vary from plant to plant, just as the bloom color varies. I have seen leaves with such a high degree of mottling I would grow the plant if it never bloomed.

The name of our local native hepatica was recently changed to *H. nobilis* var. *acuta*. The older wildflower guides list *H. acutiloba* and *H. americana*. Now both are under *H. nobilis* as *H. var. acuta* and *H. var. obtusa*. For me, *Hepatica nobilis* was the European species, so it is going to take a while for my old brain to make the transition.

According to the Medieval doctrine of signatures, God or nature placed a plant into the

natural world for each illness of man. A plant, the doctrine said, resembles the part of human anatomy whose ailments it will cure. Hepatica has leaves that resemble the shape of a human liver, thus the name "liverlobe." In the late 1800's, over 450,000 pounds of hepatica were collected annually as an herb for medicinal purposes. I remember my father taking his spoon of dark brown liquid from a patent medicine bottle that had hepatica both in the name and the contents. The fact that many of the patent medicines contained a high percentage of alcohol may have helped as much or more than the herbal ingredients inside.

The soil in my garden ranges in pH from neutral to slightly acidic over limestone. Most of my hepatica grow in raised beds containing a high percentage of compost and leaf mold. All are located in the midst of shrub and tree root competition. I have noticed over the years that seed has gotten around a bit. I now find hepatica in the richer soils of the shade garden. The only care I give my plants is to spread chopped leaf mulch each fall. All plants have a north and easterly exposure, being on the north side of a hill.

I have *Trillium nivale* (snow trillium or dwarf white trillium) as a companion to my sharp-lobed hepatica. Sometimes they bloom together, other times the hepatica blooms just a bit later than the trillium. When the trillium goes dormant and its foliage disappears toward the end of summer, the hepatica foliage persists. Trout lilies (*Erythronium* spp.) are also great companions for both flower and foliage. 🌱

Patricia Happel Cornwell grew up on a farm in Floyd County, where she first became enamored of wildflowers. She and her husband John live on 19 acres registered as a National Wildlife Federation Certified Wildlife Habitat in rural Harrison County. She became an Indiana Master Naturalist in 2010.

Correction

In the Fall 2012 Journal, the photo of dodder flowers on page 3 is attributed to Mike Homoya. The photographer is actually Scott Namestnik. 🌱

Butler – from page 1

many of the city's streams and woodland edges, and land managers spend a lot of money eradicating it."

Dolan says they were surprised to find how many of the new invasives are woody trees and shrubs. "We found 14 invasive herbaceous plants, but only garlic mustard and Japanese hops were not known for Marion County already before 1940."

The study has important lessons for cities, biodiversity and the potential dangers posed

The Butler study attracted attention from newspapers in France and Germany, CNN.com and ScienceDaily.com

by non-native species. According to Dolan: "As cities continue to grow, urban green spaces are becoming important refuges for native biodiversity and for people. In coming decades, most people's contact with nature will be in urban settings, so the social importance of urban plants has never been greater."

The paper "Documenting effects of urbanization on flora using herbarium records" was co-authored by longtime INPAWS members Rebecca W. Dolan, Marcia E. Moore, and Butler undergraduate Jessica D. Stephens (since graduated). It appeared in the *Journal of Ecology* on March 18, 2011. Moore is a former INPAWS webmaster. It received wide attention, including from newspapers in France and Germany, CNN.com, and ScienceDaily.com. It is one of the few to document changes in the flora of a city through time in the USA. More studies of this sort have been published for European cities.

To receive a pdf of the original article, contact Dr. Dolan at rdolan@butler.edu or 317-940-9413.

More information on the flora of Marion County is available on the herbarium's website at www.butler.edu/herbarium and Dr. Dolan's blog at <http://blogs.butler.edu/indianaplants/>.



Specimen sheets like this one of *Onoclea sensibilis*, common sensitive fern, from Butler's Friesner Herbarium provided data for the research by Dr. Dolan and her team.

Letha's Best Year Yet

Nearly 1,800 young people served

by Cheryl Shearer, Chair

Letha's Fund had a good year in 2012. We received more applications for grants than in previous years, more youth had a meaningful outdoor experience because of the grants, and trip leaders demonstrated greater awareness of the importance of native plants. INPAWS membership increased its financial support for Letha's Fund as well.

The quality of applications was impressive. The majority were from teachers wanting to provide an environmental education experience for their students. The late Donovan Miller (former chair of Youth Outreach) urged the United Urban Network of Lake County to seek funding because of its unique approach – they reach out to youth who live less than a mile from the Indiana Dunes Lakeshore yet have never ventured into this nearby national treasure.

Letha's Fund awarded this grant and the Network, partnering with the Calumet Stewardship Initiative, arranged for 40 youth and various supportive adults to spend a day at the Paul H. Douglas Nature Center within the Dunes National Park. According to Eric Neagu of the Initiative, it has been extremely difficult to get urban youth to want to explore this environment. But with this combined effort, students did make the trip and even produced an entertaining video about their adventure, which has been posted on YouTube. The United Urban Network's guiding belief states "...you cannot bestow poverty and ignorance of any kind on any section or class of people, and not expect nature to suffer." Kudos to them for their commitment to igniting a respect for nature among urban youth. Interestingly, the National Park Service has stepped up efforts to interest urban youth in our National Parks.

Letha's Fund sponsored two students to attend the INPAWS Annual Conference in November. Jenna Parks is a high school junior and an enthusiastic volunteer at the Eagle Creek Discovery Center. She hopes to make a career in environmental science. She writes, "I appreciate the scholarship and am even more thankful now that I know the story behind Letha's Fund.The knowledge I gained will help my future college major and career inter-

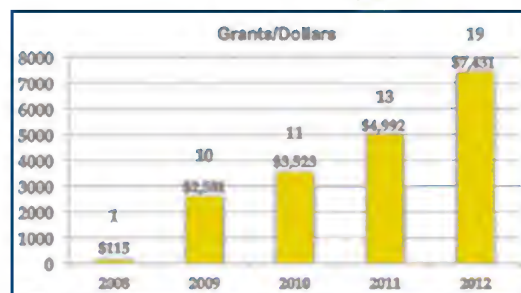
ests." Brad Harmening is a Marian University junior, serving an internship at the Marian EcoLab. A biology major, he is working on an Environmental Science concentration and hopes to pursue a graduate degree. He was especially impressed with Dr. Rob Naczi's and Mike Homoya's presentations, saying they inspired him further in his career choice.

Grants & Awards



Jennifer Windle

During Earth Day activities at Southeastway Park, Lola Reddick, a second grade student at Kitley Elementary, had a close encounter with nature, thanks to Letha's Fund.



Both donations and grants have increased steadily since 2008.

Letha's Fund Donors

- | | |
|---------------------------|-------------------------|
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| Jeremiah & Teresa Batto | Cheryl Shearer |
| Warren Buckler | Dawn Stelts |
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In Honor of Donovan Miller

- Central Indiana Land Trust (gift to general fund)
- Tom & Kathy Hohman
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- Lynn & Loranne Miller
- Shawndra Miller
- Melissa Moran
- Christine & George Plews

Mountain Laurel – from back cover

The showy clusters of pinkish flowers of mountain laurel are normally evident in Indiana from mid-May to mid-June, creating a floral display that's in a class by itself. Even the flower buds are attractive, each having the appearance of a swirl of ice cream in a cone, or a twist of icing decorating a cake.

Once open, each flower is approximately three-quarters of an inch across, with five petals fused together to form the shape of a deep saucer. The flower has ten stamens (male reproductive parts) and one pistil (female reproductive part). The stamen is composed of a long stalk (filament) with an anther at its end (where the pollen is found). The anthers are tucked into special small pockets in the petals, causing the attached filaments to be under considerable tension as they arch back to the center of the flower. The pistil is the location for the eggs, and is where seeds form following egg fertilization.

Before fertilization can occur, however, the pollen, which carries the sperm, must get to the pistil. This is accomplished by an interesting process that occurs when an insect such as a bee visits a flower in search of nectar. During the visit, the bee unintentionally touches one or more of the stamens, releasing the tension of the filament and catapulting the anther onto the bee, dusting it with pollen. The bee then brushes against and transfers pollen to the pistil of that flower or another, thus completing the process of pollination and allowing for fertilization.

In some ways, mountain laurel is a beauty masking a beast. The leaves are known to be quite poisonous. Even the honey made from its nectar, while nourishing for bees, is toxic to humans. The poison is so powerful that the Delaware Indians ingested mountain laurel to commit suicide. The flowers are poisonous also. In one case, a zoo monkey was poisoned by eating laurel flowers fed to it by a well-intentioned visitor.

Mountain laurel can also be a beast to a person trying to walk through a dense thicket of the shrub. This is not a problem in Indiana because the plant is so rare, but in the Appalachian Mountains dense laurel and rhododendron thickets are sometimes referred to as "hells" because of their impenetrable nature.

In most of its range, mountain laurel is associated with acid soils in rugged, rocky terrain. In

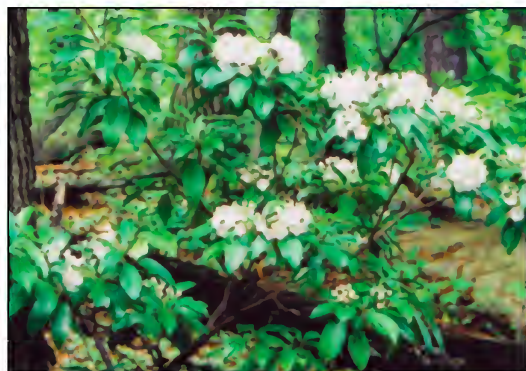
Indiana as well, it occurs mostly on steep, rocky hillsides and on precipices of sandstone cliffs. In Clark and Floyd Counties, mountain laurel is a rare plant that occurs only on the upper slopes of steep hillsides in the Knobstone Escarpment area of the Highland Rim Natural Region. There it is found in close association with chestnut oak and Virginia pine. In Crawford and Perry Counties, where mountain laurel is not quite as rare, it grows almost exclusively on sandstone cliffs and boulders in the Crawford Upland area of the Shawnee Hills Natural Region.

To date, no counties other than those mentioned are known to have wild populations of mountain laurel, although one might expect to find it in some of the surrounding counties. (Since the original appearance of this article an additional population has been discovered in Harrison County). At present, the species is listed by the Division of Nature Preserves as "watch-list" in the state. This means that the species, while not officially listed as rare, threatened, or endangered, is being monitored for population changes that might necessitate a stronger listing. If you know of any mountain laurel occurring naturally outside of the previously mentioned counties, a notification to the Division of Nature Preserves of its location would be appreciated.

Whether in the Smoky Mountains or the hills of southern Indiana, mountain laurel in bloom is a sight to behold. Be assured that your effort to see this most beautiful flowering shrub will be well rewarded. 🌱

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Michael Homoya, author, plant ecologist, and botanist with the Indiana Division of Nature Preserves since 1982, is regarded as one of the finest field-botanists of the Midwest.



Mountain laurel in spring (above) and winter twig. The leaves of our beautiful mountain laurel are highly toxic.

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Beauty or Beast?

Rare in Indiana, mountain laurel occupies rocky hillsides, sandstone precipices

by Mike Homoya

Imagine yourself enjoying an early summer day lounging beside a crystal-clear, briskly flowing stream, watching the water twist and turn its way through a deep ravine bordered with massive sandstone cliffs. The forest around you is replete with verdant, almost tropical-looking growth; even the rocks are green, painted with a lush growth of mosses and liverworts. In this uniformity of green, delicate hues of ink and white stand out in the branches of vegetation above a distant sandstone cliff. Intrigued, you cross the stream for a closer look, and to your delight, observe many exquisite flower clusters of what certainly must be one of the most spectacular of all North American shrubs, the magnificent mountain laurel (*Kalmia latifolia*).

You may think the region described in the above scenario must be somewhere in the Appalachian Mountains, and it well could be, but this is Perry County. That's right, mountain laurel, that spectacular flowering shrub so characteristic of the Appalachian Mountains, occurs right here in Indiana!

Mountain laurel is a medium-sized, woody shrub (rarely a small tree) that has simple, thick, evergreen leaves measuring two to three inches long and one inch wide. It is a member of the heath family, a plant family which contains many beautiful and valuable plants, such as azalea, blueberry, heather, and heath. The genus name, *Kalmia*, commemorates Pehr Kalm, an 18th century Swedish botanist and early plant collector in North America. The epithet *latifolia* means broad-leaved, a description applicable when compared to other members of the genus. There are several other common names for mountain laurel, including calico bush, ivy bush, and spoonwood. The latter name reflects the use of *Kalmia* wood by early pioneers for making spoons. It is also said that the wood was used for making tobacco pipes.

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